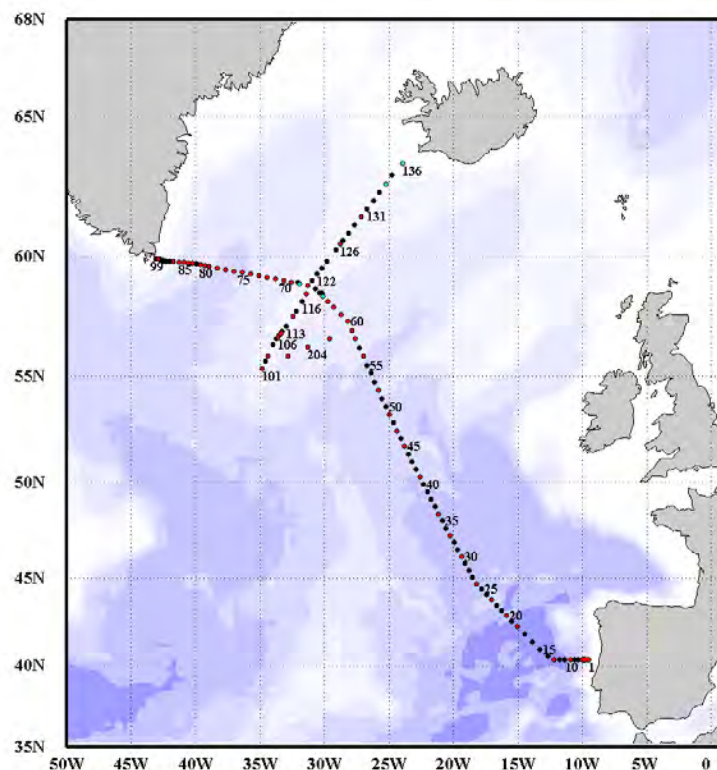


# CRUISE REPORT: BOCATS

(Updated JUL 2021)



## Highlights

### Cruise Summary Information

Section Designation	<b>BOCATS</b>		
Expedition designation (ExpoCodes)	<b>29AH20160617</b>		
Chief Scientists	<b>Fiz Fernández Pérez / CSIC-IIM</b>		
Dates	2016 June 17 – 2016 July 31		
Ship	BIO <i>Sarmiento De Gamboa</i>		
Ports of call	Vigo (Spain) - Reykjavik (Iceland)		
Geographic Boundaries	63.4166		
	-43.0754		-9.4642
	40.3331		
Stations	132 CTD stations		
Floats and drifters deployed	9 ARGO floats deployed		
	5 drifting bouys deployed		
	2 ASFAR deployments		
Moorings deployed or recovered	0		

Contact Information:

**Fiz Fernández Pérez**

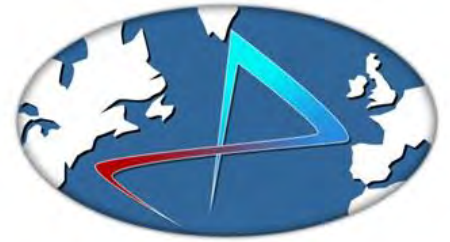
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# BOCATS Cruise Report

**17 June – 31 July 2016**

**BIO Sarmiento de Gamboa**

**Expocode: 29AH20160617**



## SUMMARY

The objectives of the BOCATS cruise are fulfilled in spite of the problems derived from the installation of the new signal transmission cable. This operation delayed the departure by one week. However, this delay was recovered thanks to the speed of the ship, the constant adaptation of the cruise planning to the weather forecasts and the excellent reliability of the CTD and box-corer operations. A total of 138 CTD stations and 66 sediment sampling were done. In addition, the recovery and new deployment of two ASFAR-ARGO systems were done, as well as the deployment of five meteorological floats and nine ARGO floats.

**Project funded by MINECO, Ref. CTM2013-41048-P**

## 1. INTRODUCTION

Recent evaluations of the CO<sub>2</sub> uptake in the North Atlantic showed that the natural component of the carbon cycle has been affected by the variability of the Meridional Overturning Circulation (MOC). The first goal of BOCATS is to extend the time series of MOC and water ventilation observations to better quantify their effects on the carbon cycle in the North Atlantic on decadal time scales. The estimation of this variability is essential to evaluate the future scenarios of climate change. The second goal of BOCATS is to evaluate the effect of present atmospheric CO<sub>2</sub> increase in the CaCO<sub>3</sub> production and dissolution. Recent estimates of acidification in the North Atlantic show a significant effect in deep waters that have a potential impact on calcareous organisms and call into question the generally accepted hypothesis of steady-state CaCO<sub>3</sub> cycle. The objectives of BOCATS are addressed through two main activities: i) continuation of the decadal monitoring of the circulation and carbon cycle in the subpolar North Atlantic with the 9th occupation of the A25 hydrography/geochemistry section from Portugal to Greenland (BOCATS cruise) that was first occupied in 1997, and ii) evaluation of the variability of the carbon cycle in the subpolar gyre by separating between natural and anthropogenic components and including organic matter, sediments and other biogenic elements. A major observational contribution of BOCATS is the BOCATS cruise. The planned high quality observations in the subpolar gyre will contribute to the early detection of the alteration of the carbon cycle and will allow the accurate estimation of the rates of CO<sub>2</sub> storage and acidification, relating these changes to the variability of the MOC.

The BOCATS cruise aims to assess the transport of water, salt, heat, natural and anthropogenic CO<sub>2</sub>, and other biogeochemical tracers (Chlorofluorocarbons –CFC–, methane –CH<sub>4</sub>– and dinitrogen oxide –N<sub>2</sub>O– and determining CO<sub>2</sub> the flux between the water column and sediment along a section that has been repeated from 2002 ([www.umr-llops.fr/Projets/Projets-actifs/OVIDE](http://www.umr-llops.fr/Projets/Projets-actifs/OVIDE)) and is part of international programs GOSHIP ([http://www.goship.org/RefSecs/goship\\_ref\\_secs.html](http://www.goship.org/RefSecs/goship_ref_secs.html)) and CLIVAR / IOPCC (see Fig. 1). These programs allow coordinating the different actions in the Atlantic and manage the databases of CLIVAR, IOPCC and GLODAP. The main line of the BOCATS cruise, the OVIDE section, has been the subject of study in European projects CARBOOCEAN and CARBOCHANGE (<http://carbochange.b.uib.no/>) and the earlier project National Plan CATARINA. In April 2014 the H2020 AtlantOS project "**Optimizing and Enhancing the Integrated Atlantic Ocean Observing Systems Research**" began coordinating the European activities related with GOSHIP and also supporting the OVIDE section. In fact, part of the chemical group in BOCATS cruise was supported by AtlantOS.

The work on board was developed in three main types of operations: i) CTD hydrographic stations and sampling and chemical work linked to them; ii) sediment sampling using box-corer and Shipek and iii) deployments of meteorological and hydrographical buoys (SVP, PROVOR). In addition, the automatic systems of data acquisition of the ship – positioning, aptitude, meteorological station, thermosalinograph, fluorimeter, Sound EA600 and pCO<sub>2</sub>-GO system, and two ADCP (Acoustic Doppler Current Profiler) were continuously working and the recording was checked and calibrated.

During this cruise, 19 scientists (4 from Universidad de Vigo, 7 from IFREMER and 8 from Instituto de Investigaciones Marinas de Vigo of CSIC), and 7 technicians from UTM have participated. [Table 1](#) describes the team with the main tasks developed by each participant.

The expocode of the cruise is 29SG20160617.

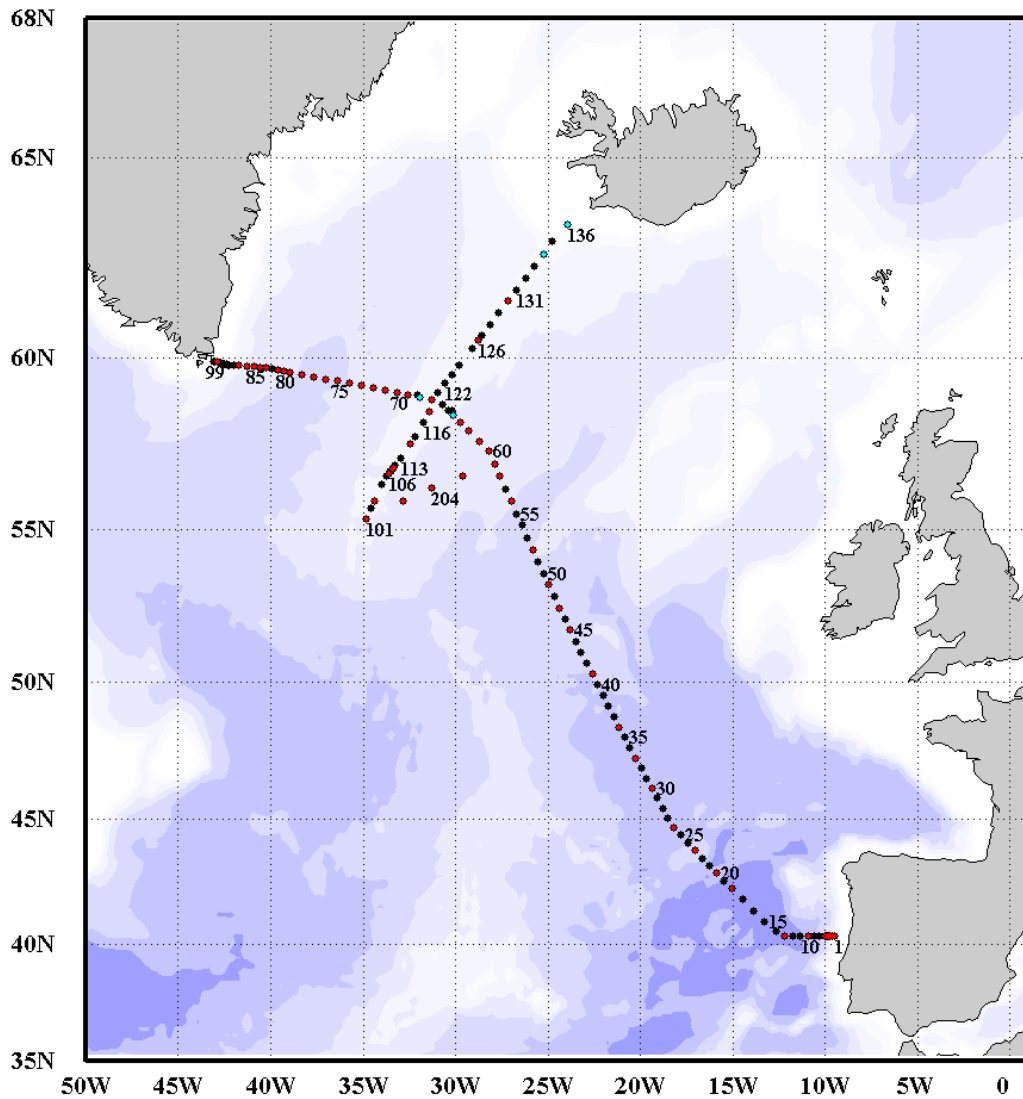
Metadata information can be found by querying for "BOCATS" in Free Search box of SEADATANET download portal: [http://seadata.bsh.de/Cgi-csr/retrieve\\_sdn2/start\\_sdn2.pl](http://seadata.bsh.de/Cgi-csr/retrieve_sdn2/start_sdn2.pl)  
Alternatively, the CSR report in XML format can be downloaded from:  
[http://seadata2.bsh.de/Cgi-csr/XML/xmlDownload\\_V2.pl?csrref=20165910](http://seadata2.bsh.de/Cgi-csr/XML/xmlDownload_V2.pl?csrref=20165910)).





## 2. HYDROGRAPHIC STATIONS

The geographical distribution of the stations is shown in Figure 2. They are divided in two sections: OVIDE and RREX. The positions, dates and depths of the stations are given in [Tables 2](#) and [3](#). Three additional sediment stations (202, 204 and 206) are also included in Figure 2 ([Table 12](#)).



**Figure 2:** Hydrographic (CTD) and sediment stations during BOCATS cruise. Positions of Box-corer samples are in red and Shipek samples in green. CTD casts were carried out at all stations except 202, 204 and 206.

Table 2.- Position, date and depth of the station along the OVIDE section

St.	DATE	LATITUDE N	LONGITUDE W	BOTTOM DEPTH (m)
0	22-Jun-16	40.3342	-10.9050	4854
1	22-Jun-16	40.3331	-9.4642	157
2	22-Jun-16	40.3345	-9.6432	385
3	22-Jun-16	40.3341	-9.7679	821
4	23-Jun-16	40.3340	-9.8051	1440
5	23-Jun-16	40.3345	-9.8794	2772
6	23-Jun-16	40.3343	-9.9420	3395
7	23-Jun-16	40.3341	-10.0341	3542
8	23-Jun-16	40.3342	-10.3001	3901
9	24-Jun-16	40.3341	-10.5720	4340
10	24-Jun-16	40.3342	-10.9059	4853
11	24-Jun-16	40.3342	-11.3390	5098
12	24-Jun-16	40.3339	-11.7743	5216
13	25-Jun-16	40.3341	-12.2210	5260
14	25-Jun-16	40.5523	-12.6555	5307
15	25-Jun-16	40.9362	-13.2952	5346
16	26-Jun-16	41.3824	-13.8903	5346
17	26-Jun-16	41.8360	-14.4771	5336
18	26-Jun-16	42.2804	-15.0625	5308
19	27-Jun-16	42.5791	-15.4595	5070
20	27-Jun-16	42.8850	-15.8517	4192
21	27-Jun-16	43.1830	-16.2447	5126
22	28-Jun-16	43.4780	-16.6356	4173
23	28-Jun-16	43.7744	-17.0291	4011
24	28-Jun-16	44.0758	-17.4253	3801
25	28-Jun-16	44.3783	-17.8177	4952
26	29-Jun-16	44.6738	-18.2107	4824
27	29-Jun-16	45.0520	-18.5032	4611
28	29-Jun-16	45.4191	-18.7947	4571
29	30-Jun-16	45.7939	-19.0861	4523
30	30-Jun-16	46.1691	-19.3765	4606
31	30-Jun-16	46.5418	-19.6745	4561
32	01-Jul-16	46.9177	-19.9683	4505
33	01-Jul-16	47.2912	-20.2637	4516
34	01-Jul-16	47.6625	-20.5599	4349
35	01-Jul-16	48.0367	-20.8520	4457
36	02-Jul-16	48.4099	-21.1409	4338
37	03-Jul-16	48.7872	-21.4329	4090
38	03-Jul-16	49.1579	-21.7265	4343
39	03-Jul-16	49.5344	-22.0182	4231
40	03-Jul-16	49.9040	-22.3127	4001
41	04-Jul-16	50.2823	-22.6085	4133
42	04-Jul-16	50.6459	-22.8997	3735
43	04-Jul-16	51.0280	-23.2017	3918
44	04-Jul-16	51.4021	-23.4853	3247
45	05-Jul-16	51.7705	-23.7849	3850
46	05-Jul-16	52.1480	-24.0734	3907
47	05-Jul-16	52.5189	-24.3585	3597
48	06-Jul-16	52.8895	-24.6591	3613
49	06-Jul-16	53.2652	-24.9480	3527

St	DATE	LATITUDE N	LONGITUDE W	BOTTOM DEPTH (m)
50	06-Jul-16	53.6393	-25.2400	3580
51	06-Jul-16	54.0180	-25.5301	3044
52	06-Jul-16	54.3879	-25.8309	3056
53	07-Jul-16	54.7620	-26.1203	3613
54	07-Jul-16	55.1491	-26.4111	3379
55	07-Jul-16	55.5061	-26.7076	3235
56	07-Jul-16	55.8829	-26.9983	2882
57	08-Jul-16	56.2555	-27.2984	2738
58	08-Jul-16	56.6310	-27.5883	2726
59	08-Jul-16	57.0130	-27.8825	2753
60	08-Jul-16	57.3806	-28.1726	2607
61	09-Jul-16	57.7377	-28.7238	2457
62	09-Jul-16	57.9695	-29.2802	2141
63	09-Jul-16	58.2102	-29.7298	2237
64	09-Jul-16	58.4108	-30.1042	2178
65	09-Jul-16	58.5493	-30.3665	1615
66	09-Jul-16	58.7264	-30.6994	1451
67	10-Jul-16	58.8463	-31.2697	1483
68	10-Jul-16	58.9104	-31.9120	1695
69	10-Jul-16	58.9752	-32.5549	1881
70	10-Jul-16	59.0410	-33.1924	2284
71	10-Jul-16	59.1011	-33.8338	2290
72	10-Jul-16	59.1664	-34.4763	2519
73	11-Jul-16	59.2336	-35.1140	2991
74	11-Jul-16	59.2994	-35.7623	3100
75	11-Jul-16	59.3635	-36.3980	3095
76	11-Jul-16	59.4276	-37.0386	3117
77	11-Jul-16	59.4922	-37.6779	3112
78	12-Jul-16	59.5596	-38.3187	3041
79	12-Jul-16	59.6247	-38.9582	2926
80	12-Jul-16	59.6542	-39.2773	2860
81	12-Jul-16	59.6856	-39.6001	2795
82	12-Jul-16	59.7049	-39.9187	2734
83	12-Jul-16	59.7242	-40.2532	2656
84	12-Jul-16	59.7399	-40.5808	2630
85	12-Jul-16	59.7576	-40.9072	2269
86	13-Jul-16	59.7718	-41.2951	2041
87	13-Jul-16	59.7978	-41.7281	1846
88	13-Jul-16	59.7972	-42.0032	1724
89	13-Jul-16	59.8084	-42.2341	1218
90	13-Jul-16	59.8160	-42.2751	899
91	13-Jul-16	59.8182	-42.3131	549
92	13-Jul-16	59.8215	-42.3979	307
93	13-Jul-16	59.8308	-42.5201	228
94	13-Jul-16	59.8458	-42.6006	201
95	13-Jul-16	59.8595	-42.7012	184
96	13-Jul-16	59.8758	-42.7955	184
97	13-Jul-16	59.8913	-42.9058	184
98	13-Jul-16	59.9038	-43.0041	170
99	13-Jul-16	59.9130	-43.0754	161

Table 3.- Position, date and depth of the station along the RREX section.

St	DATE	LATITUDE N	LONGITUDE W	BOTTOM DEPTH (m)
100	18-Jul-16	58.5470	-30.1831	1707
101	21-Jul-16	55.3491	-34.8138	2212
102	21-Jul-16	55.6714	-34.5708	1460
103	21-Jul-16	55.9076	-34.3939	1834
104	21-Jul-16	56.3988	-34.0208	1709
105	21-Jul-16	56.6353	-33.7130	1299
106	21-Jul-16	56.7021	-33.6260	1833
107	21-Jul-16	56.7249	-33.5939	2424
108	22-Jul-16	56.7811	-33.5242	1691
109	22-Jul-16	56.7998	-33.4845	1097
110	22-Jul-16	56.8502	-33.4331	1896
111	22-Jul-16	56.9098	-33.3543	1925
112	22-Jul-16	56.9499	-33.3035	1645
113	22-Jul-16	57.1753	-33.0018	1071
114	22-Jul-16	57.5776	-32.4779	1731
115	23-Jul-16	57.8003	-32.2167	1433
116	23-Jul-16	58.2003	-31.7504	1592
117	23-Jul-16	58.5303	-31.4223	1663
118	23-Jul-16	58.8452	-31.2696	1464

St.	DATE	LATITUDE N	LONGITUDE W	BOTTOM DEPTH (m)
119	23-Jul-16	58.9706	-32.0975	1699
120	24-Jul-16	58.8451	-31.2687	1454
121	24-Jul-16	59.0500	-30.9527	1303
122	24-Jul-16	59.3003	-30.5696	1321
123	24-Jul-16	59.5496	-30.1883	1240
124	24-Jul-16	59.8000	-29.8062	998
125	24-Jul-16	60.2400	-29.1293	704
126	24-Jul-16	60.4699	-28.7782	1275
127	25-Jul-16	60.5992	-28.5793	792
128	25-Jul-16	60.9028	-28.1180	662
129	25-Jul-16	61.2014	-27.6590	680
130	25-Jul-16	61.4989	-27.1756	714
131	25-Jul-16	61.7998	-26.6917	1047
132	25-Jul-16	62.1001	-26.2056	775
133	26-Jul-16	62.4000	-25.7221	682
134	26-Jul-16	62.7000	-25.2371	613
135	26-Jul-16	63.0002	-24.7521	257
136	26-Jul-16	63.4166	-23.9172	142



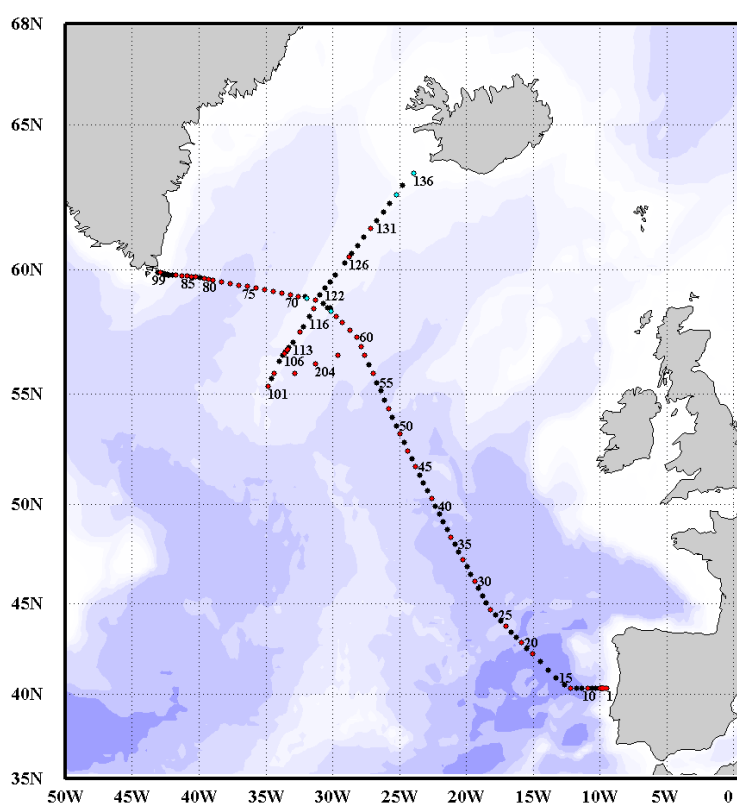


Laboratoire d'Océanographie Physique et Spatiale  
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<http://www.ump-lops.fr>

# BOCATS 2016

## CTD-O<sub>2</sub> Data report

Author(s): P. Branellec, P. Lherminier



Ref.: Int. rep. LOPS/17-06 (June 2017)

LOPS - Ifremer – 1625 Route de Sainte-Anne – CS10070 – 29280 Plouzané  
 IUEM, Rue Dumont d'Urville, 29280 Plouzané

# BOCATS 2016

## CTD-O<sub>2</sub> Data report



18/06/2016 to 31/07/2016

On board B/O Sarmiento de Gamboa

Vigo (Spain) - Reykjavik (Iceland)

**Expocode: 29SG20160617**

## ABSTRACT

The BOCATS cruise (Biennial Observation of Carbon, Acidification, Transport and Sedimentation) was carried out in the North Atlantic from Vigo (June 18) to Reykjavik (July 31). It was composed of 2 main sections: the OVIDE section coast to coast between Portugal and the south tip of Greenland, followed by the Reykjanes Ridge section, from 55 °N to Iceland. The classical hydrographic rosette was cast 137 times along the route. While the CTD-O2 probe acquired continuous profiles of the “physical” variables (pressure, temperature, salinity and dissolved oxygen), 28 Niskin bottles were closed at different levels during the upcast to provide samples for biogeochemical analysis. We report here an overview of the cruise operations and team, followed by a focus on the acquisition and calibration steps of the physical variables measured specifically by the hydrographic CTD-O2 probe.

After calibration, we find precisions for pressure, temperature, salinity and dissolved oxygen that fit the GO-SHIP international quality requirements. Pressure and temperature were calibrated at the laboratory before and after the cruise, leading to a precision of 1 dbar and 0.002 °C respectively. The calibration of salinity and dissolved oxygen data is obtained by applying polynomial correcting functions that are calculated to statistically minimize the differences between the probe data and the sample data analyzed on board in the chemistry container. These chemical data are also evaluated by the comparison of replicates. After calibration, the differences in salinity and oxygen follow a zero-centered Gaussian-like distribution which standard deviation is used to evaluate the probe precision for each variable. For salinity, we find a standard deviation of 0.001, and for oxygen, 0.027 ml/l (or 1.3 µmol/kg). Those numbers correspond to a 68 % confidence interval and must be doubled to reach a precision with a 95 % confidence interval.

## RESUME

La campagne BOCATS s'est déroulée en Atlantique Nord, de Vigo (18 juin) à Reykjavik (31 juillet). Elle se compose de 2 sections principales: la section OVIDE du Portugal à la pointe sud du Groenland, suivie de la section sur la Ride de Reykjanes, de 55 °N à l'Islande. La rosette hydrographique a été mise à l'eau à 137 stations sur cette route. Alors que la sonde CTD-O<sub>2</sub> enregistrait en continu les variables dites « physique » (pression, température, salinité et oxygène dissous), 28 bouteilles Niskin étaient fermées à la remontée à différentes profondeurs afin de disposer d'échantillons d'eau de mer pour les analyses biogéochimiques. Ce rapport expose tout d'abord une présentation des opérations et de l'équipe de la campagne, suivie par les étapes d'acquisition et d'ajustage des variables physiques mesurés par la sonde CTD-O<sub>2</sub> de la rosette classique.

Après ajustage, la précision estimée pour la pression, la température, la salinité et l'oxygène dissous est conforme aux exigences internationales des campagnes GO-SHIP. La pression et la température ont été ajustées grâce à une vérification au laboratoire de métrologie avant et après la campagne, et les précisions de 1 dbar et 0.002 °C sont obtenues respectivement. L'ajustage des données de salinité et oxygène dissous se fait par application de polynômes de correction calculés pour statistiquement minimiser l'écart entre les données de la sonde et les analyses chimiques faites sur les prélèvements, ces dernières étant validées par l'analyse régulière de doublons. La différence entre les données de la sonde après ajustage et les données de chimie suit une distribution quasi gaussienne centrée sur zéro pour les deux variables, et la précision des données est estimée par le calcul de l'écart-type de cette distribution, qui donne une valeur de 0.001 en salinité et 0.027 ml/l (soit 1.3 µmol/kg) en oxygène, correspondant à un intervalle de confiance de 68%. Une précision à 95 % nécessite de doubler la valeur de l'écart-type.



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# 1. BOCATS 2016

## 1.1. Cruise objectives

Recent evaluations of the CO<sub>2</sub> uptake in the North Atlantic showed that the natural component of the carbon cycle has been affected by the variability of the Meridional Overturning Circulation (MOC). The first goal of BOCATS is to extend the time series of the MOC and water ventilation observations to better quantify their effects on the carbon cycle in the North Atlantic on interannual to decadal time scales. The estimation of this variability is essential to evaluate the future scenarios of climate changes. The second goal of BOCATS is to evaluate the effect of present atmospheric CO<sub>2</sub> increase in the CaCO<sub>3</sub> production and dissolution. Recent estimates of acidification in the North Atlantic show a significant effect in deep waters that have a potential impact on calcareous organisms and call into question the generally accepted hypothesis of steady-state CaCO<sub>3</sub> cycle. The objectives of BOCATS are addressed through two main activities: i) Continuation of the decadal monitoring of the circulation and carbon cycle in the subpolar North Atlantic with the 9th occupation of the A25 hydrography/geochemistry section from Portugal to Greenland that was first occupied in 1997. ii) Evaluation of the variability of the carbon cycle in the subpolar gyre separating between natural and anthropogenic components and including organic matter, sediments and other biogenic elements. A major observational contribution of BOCATS is the BOCATS cruise. The high quality observations in the subpolar gyre will contribute to the early detection of the alteration of the carbon cycle and will allow the accurate estimation of the rates of CO<sub>2</sub> storage and acidification, relating these changes with the variability of the MOC.

The BOCATS cruise, reported in detail by Perez (2017), aims to assess the transport of water, salt, heat, natural and anthropogenic CO<sub>2</sub>, other biogeochemical tracers (Chlorofluorocarbons –CFC-, methane (CH<sub>4</sub>) and dinitrogen oxide (N<sub>2</sub>O) and determining CO<sub>2</sub> flux between the water column and sediment along a section that has been repeated from 2002 ([www.umr-lops.fr/Projets/Projets-actifs/OVIDE](http://www.umr-lops.fr/Projets/Projets-actifs/OVIDE)) and is part of international programs GOSHIP ([http://www.go-ship.org/RefSecs/goship\\_ref\\_secs.html](http://www.go-ship.org/RefSecs/goship_ref_secs.html)) and CLIVAR / IOPCC (see Figure 1). These programs allow coordinating the different actions in the Atlantic and manage the databases of CLIVAR, IOPCC and GLODAP. The main line of the BOCATS cruise, the OVIDE section, has been the subject of study in European projects CARBOOCEAN and CARBOCHANGE (<http://carbochange.b.uib.no/>) and the earlier project Spanish National Plan CATARINA, followed by the BOCATS project funded by MINECO (Ref. CTM2013-41048-P). In April 2015 the H2020 AtlantOS project "**Optimizing and Enhancing the Integrated Atlantic Ocean Observing Systems Research**" began coordinating the European activities related with GOSHIP and also supporting the OVIDE section. In fact, part of the chemical group in BOCATS cruise was supported by AtlantOS, while the physical group was supported by Ifremer (OVIDE project) and the "Laboratoire d'Excellence" LabexMER (ANR-10-LABX-19) and co-funded by a grant from the French government under the program "Investissements d'Avenir".

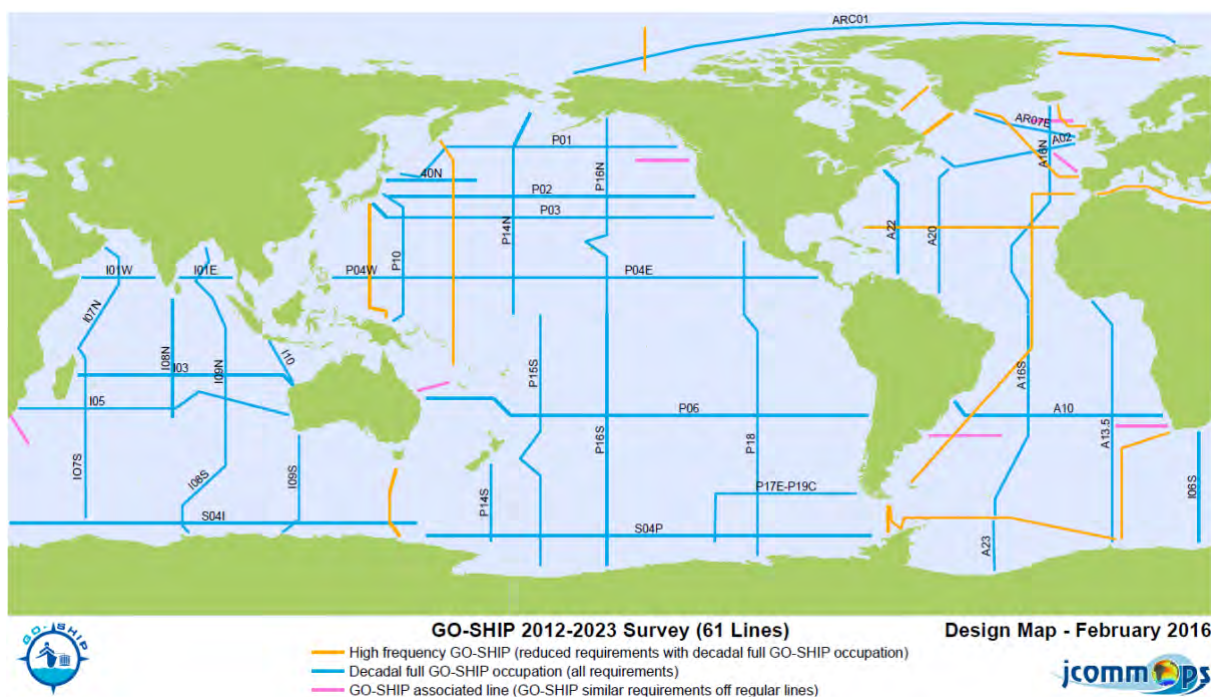


Figure 1: GO-SHIP Survey.



## 2. The BOCATS 2016 Cruise

### 2.1. Introduction

The BOCATS cruise took place on board the B/O Sarmiento de Gamboa from 18th June to 31th July 2016, starting from Vigo (Spain) and finishing in Reykjavik (Iceland).



Figure 2: B/O Sarmiento de Gamboa in Vigo.

The cruise resumes the hydrological Ovide section and a part of the main RREX section. Each black dots on the map corresponds to a station.

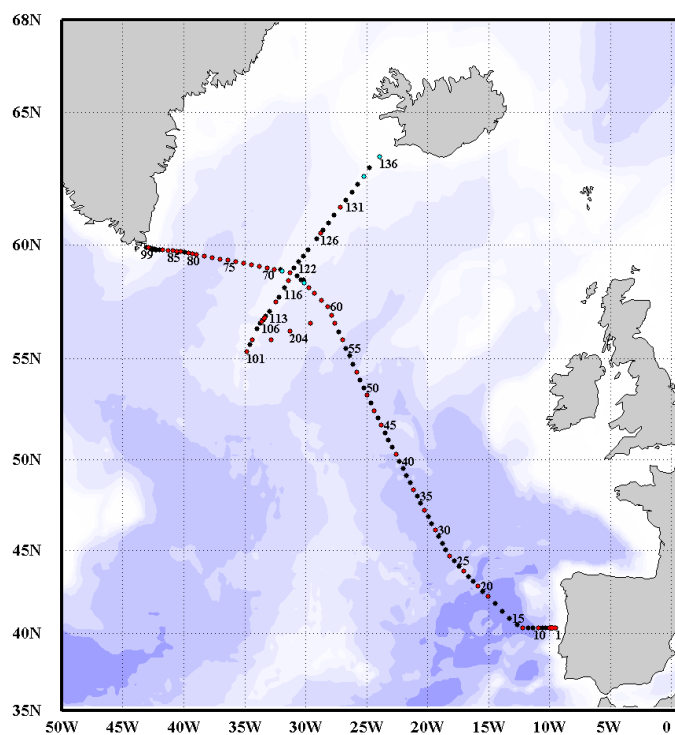


Figure 3: Map of the working area.

The following operations were carried out during the cruise:

- 137 CTD stations:
 

st 0	test station
st 1 to 99	Ovide section
st 100	CTD on Asfar3 position
st 101 to 118 and 120 to 136	RREX section
st 119	CTD on Asfar4 position
- 66 .sediments sampling stations (box corer and shipek corer)
- 9 floats deployed (Provor, Arvor and Deep Arvor).
- 5 Meteo surface drifters (SVP).
- 2 ASFAR structures were recovered (Asfar 1, Asfar 2).
- 2 ASFAR structures were deployed (Asfar 3, Asfar 4).
- SADCP measurements (Ship Acoustic Doppler Current Profiler, Ocean surveyor 75 and 150 kHz).
- Underway measurements (Thermosalinograph and pCO<sub>2</sub>).

## 2.2. Cruise participants

During this cruise, 19 scientists (4 from Universidad de Vigo, 7 from IFREMER, 8 from Instituto Investigaciones Marinas de Vigo (CSIC)) and 7 technicians from UTM (Barcelona) participated.

Name	Sex	Nationality	Organism	Task
Fernández Pérez, Fiz	M	Spanish	CSIC-IIM Vigo	Chief Scientist
Lherminier, Pascale	F	French	LOPS Ifremer	CTD, ADCP
Branellec, Pierre	M	French	LOPS Ifremer	Data processing & calibration
Leizour, Stephane	M	French	LOPS Ifremer	Buoys & CTD casts
Hamon Michel	M	French	LOPS Ifremer	Salinity & LADCP
Le Bot Philippe	M	French	LOPS Ifremer	Winkler analysis
Lagadec, Catherine	F	French	LOPS Ifremer	CTD casts
Zunino Rodriguez, Patricia	F	Spanish	LOPS Ifremer	CTD casts
Francés Pedraz, Guillermo	M	Spanish	Dpto Geologia Univ. Vigo	Box corer & sediments
Alejo Flores, Irene	F	Spanish	Dpto Geologia Univ. Vigo	Box corer & sediments
Alonso Pérez, Fernando	M	Spanish	CSIC-IIM Vigo	Nutrients
De la Paz Arándiga, Mercedes	F	Spanish	CSIC-IIM Vigo	CFC, N <sub>2</sub> O & CH <sub>4</sub>
Fernández Bastero, Susana	F	Spanish	CSIC-IIM Vigo	CFC, N <sub>2</sub> O & CH <sub>4</sub>
Garcia Ibáñez, M <sup>a</sup> Isabel	F	Spanish	CSIC-IIM Vigo	pH, alkalinity & DIC
Fernández Guallart, Elisa	F	Spanish	Univ. Vigo	pH, alkalinity & DIC
Padín Alvarez, José Antonio	M	Spanish	Univ. Vigo	Underway, pH & alkalinity
Morente Fontela, Marcos	M	Spanish	Univ. Barcelona	Water and sediment sampling
Pelayo Espinosa, Victor	M	Spanish	Dpto Geologia Univ. Vigo	Water and sediment sampling
Álvarez Fernández, M <sup>a</sup> Jesús	F	Spanish	Dpto Geologia Univ. Vigo	Water and sediment sampling
Alcoverro Franquet, Daniel	M	Spanish	CSIC-UTM	Chief technicians
Redondo Caride, Waldo	M	Spanish	CSIC-UTM	CTD technician
Giraldez Sotelo, Andres	M	Spanish	CSIC-UTM	CTD technician
Agudo González, Gustavo	M	Spanish	CSIC-UTM	CTD technician
Casal Barreiro, Ivan	M	Spanish	CSIC-UTM	Corer technician
Sanchez Mosquera, Mario	M	Spanish	CSIC-UTM	Corer technician
Hernández Giménez, Alberto	M	Spanish	CSIC-UTM	Computer technician



*Figure 4: Scientific team and Crew members.*



## 2.3. All operations timing

The work on board consisted in four main types of operations:

- CTD hydrographic stations and sampling and chemical work linked to them.
- Sediment sampling using box corer and shipek.
- Deployments of meteorological and hydrographical buoys (SVP, floats).
- Recovery and deployment of 2 Autonomous Systems For Argo float Release (ASFAR).

In addition, the automatic systems of data acquisition of the ship: positioning, aptitude, meteorological station, thermosalinograph, fluorometer, pCO<sub>2</sub>-GO system, Sound EA600 and two SADC (Ship Acoustic Doppler Current Profiler) were continuously working and recording being checked and calibrated.

The table below shows all the operations in chronological order. Each color specifies a type of operation:

- CTD ●
- Corer ●
- Float ●
- SVP ●
- ASFAR ●

Operation	Date	Time	Latitude (N)	Longitude (W)	Depth (m)	Type	Station
1.	22/06/16	01:45	40.3342	-10.9050	4854	CTD	0
2.	22/06/16	16:12	40.3331	-9.4642	157	CTD	1
3.	22/06/16	16:56	40.3332	-9.4642	155	BOX-CORER	1
4.	22/06/16	18:07	40.3345	-9.6432	385	CTD	2
5.	22/06/16	19:05	40.3332	-9.4642	383	BOX-CORER	2
6.	22/06/16	20:10	40.3341	-9.7679	821	CTD	3
7.	22/06/16	21:29	40.3341	-9.7680	814	BOX-CORER	3
8.	22/06/16	23:01	40.3340	-9.8051	1440	CTD	4
9.	23/06/16	00:49	40.3341	-9.8051	1359	BOX-CORER	4
10.	23/06/16	02:50	40.3345	-9.8794	2772	CTD	5
11.	23/06/16	05:13	40.3345	-9.8785	2772	BOX-CORER	5
12.	23/06/16	07:53	40.3345	-9.8794	2772	CTD	6
13.	23/06/16	11:30	40.3343	-9.9420	3395	CTD	7
14.	23/06/16	14:30	40.3340	-10.0340	3395	BOX-CORER	7
15.	23/06/16	21:05	40.3342	-10.3001	3901	CTD	8
16.	24/06/16	01:24	40.3341	-10.5720	4340	CTD	9
17.	24/06/16	06:27	40.3342	-10.9059	4853	CTD	10
18.	24/06/16	09:51	40.3343	-10.9050	4817	BOX-CORER	10
19.	24/06/16	12:00	40.3342	-11.3390	5098	CTD	11
20.	24/06/16	17:45	40.3339	-11.7743	5216	CTD	12
21.	24/06/16	23:40	40.3341	-12.2210	5260	CTD	13
22.	25/06/16	03:22	40.3340	-12.2210	5217	BOX-CORER	13
23.	25/06/16	09:43	40.5523	-12.6555	5307	CTD	14
24.	25/06/16	17:43	40.9362	-13.2952	5346	CTD	15
25.	26/06/16	02:07	41.3824	-13.8903	5346	CTD	16
26.	26/06/16	09:51	41.8360	-14.4771	5336	CTD	17
27.	26/06/16	17:32	42.2804	-15.0625	5308	CTD	18
28.	26/06/16	21:12	42.2803	-15.0626	5308	BOX-CORER	18
29.	27/06/16	03:45	42.5791	-15.4595	5070	CTD	19

30.	27/06/16	09:55	42.8850	-15.8517	4192	CTD	20
31.	27/06/16	13:00	42.8849	-15.8517	4180	BOX-CORER	20
32.	27/06/16	18:43	43.1830	-16.2447	5126	CTD	21
33.	28/06/16	00:48	43.4780	-16.6356	4173	CTD	22
34.	28/06/16	06:40	43.7744	-17.0291	4011	CTD	23
35.	28/06/16	09:37	43.7744	-17.0290	4006	BOX-CORER	23
36.	28/06/16	14:48	44.0758	-17.4253	3801	CTD	24
37.	28/06/16	20:24	44.3783	-17.8177	4952	CTD	25
38.	29/06/16	02:37	44.6738	-18.2107	4824	CTD	26
39.	29/06/16	06:00	44.6738	-18.2106	4823	BOX-CORER	26
40.	29/06/16	12:10	45.0520	-18.5032	4611	CTD	27
41.	29/06/16	18:34	45.4191	-18.7947	4571	CTD	28
42.	30/06/16	00:57	45.7939	-19.0861	4523	CTD	29
43.	30/06/16	07:12	46.1691	-19.3765	4606	CTD	30
44.	30/06/16	10:33	46.1691	-19.3763	4608	BOX-CORER	30
45.	30/06/16	16:28	46.5418	-19.6745	4561	CTD	31
46.	30/06/16	23:21	46.9177	-19.9683	4505	CTD	32
47.	01/07/16	05:24	47.2912	-20.2637	4516	CTD	33
48.	01/07/16	08:39	47.2911	-20.2635	4517	BOX-CORER	33
49.	01/07/16	14:30	47.6625	-20.5599	4349	CTD	34
50.	01/07/16	20:44	48.0367	-20.8520	4457	CTD	35
51.	02/07/16	02:47	48.4099	-21.1409	4338	CTD	36
52.	02/07/16	05:54	48.4099	-21.1408	4339	BOX-CORER	36
53.	03/07/16	04:01	48.7872	-21.4329	4090	CTD	37
54.	03/07/16	09:56	49.1579	-21.7265	4343	CTD	38
55.	03/07/16	16:00	49.5344	-22.0182	4231	CTD	39
56.	03/07/16	22:00	49.9040	-22.3127	4001	CTD	40
57.	04/07/16	03:32	50.2823	-22.6085	4133	CTD	41
58.	04/07/16	06:31	50.2823	-22.6084	4141	BOX-CORER	41
59.	04/07/16	11:45	50.6459	-22.8997	3735	CTD	42
60.	04/07/16	17:13	51.0280	-23.2017	3918	CTD	43
61.	04/07/16	22:30	51.4021	-23.4853	3247	CTD	44
62.	05/07/16	03:23	51.7705	-23.7849	3850	CTD	45
63.	05/07/16	06:11	51.7706	-23.7849	3858	BOX-CORER	45
64.	05/07/16	10:52	52.1480	-24.0734	3907	CTD	46
65.	05/07/16	16:50	52.5189	-24.3585	3597	CTD	47
66.	05/07/16	19:31	52.5189	-24.3584	3617	BOX-CORER	47
67.	05/07/16	23:54	52.8895	-24.6591	3613	PROVOR	48
68.	06/07/16	00:19	52.8895	-24.6591	3613	CTD	48
69.	06/07/16	05:25	53.2652	-24.9480	3527	CTD	49
70.	06/07/16	08:12	53.2653	-24.9480	3543	BOX-CORER	49
71.	06/07/16	12:47	53.6393	-25.2400	3580	CTD	50
72.	06/07/16	18:03	54.0180	-25.5301	3044	CTD	51
73.	06/07/16	22:40	54.3879	-25.8309	3056	CTD	52
74.	07/07/16	01:04	54.3880	-25.8308	3078	BOX-CORER	52
75.	07/07/16	05:20	54.7620	-26.1203	3613	CTD	53
76.	07/07/16	10:18	55.1491	-26.4111	3379	CTD	54
77.	07/07/16	15:20	55.5061	-26.7076	3235	CTD	55
78.	07/07/16	20:13	55.8829	-26.9983	2882	CTD	56
79.	07/07/16	04:58	55.8830	-26.9983	2921	BOX-CORER	56
80.	08/07/16	02:42	56.2555	-27.2984	2738	CTD	57
81.	08/07/16	08:01	56.6310	-27.5883	2726	CTD	58
82.	08/07/16	09:19	56.6310	-27.5884	2748	BOX-CORER	58
83.	08/07/16	13:17	57.0130	-27.8825	2753	CTD	59
84.	08/07/16	15:37	57.0126	-27.8810	2789	BOX-CORER	59
85.	08/07/16	17:49	57.3806	-28.1726	2607	CTD	60
86.	08/07/16	19:41	57.3798	-28.1710	2638	BOX-CORER	60

87.	08/07/16	23:32	57.6737	-28.7238	2457	CTD	61
88.	09/07/16	01:32	57.6740	-28.7225	2487	BOX-CORER	61
89.	09/07/16	03:45	57.9643	-29.2680	2144	PROVOR	62
90.	09/07/16	04:06	57.9695	-29.2802	2141	CTD	62
91.	09/07/16	06:00	57.9690	-29.2797	2151	BOX-CORER	62
92.	09/07/16	09:24	58.2102	-29.7298	2237	CTD	63
93.	09/07/16	11:26	58.2085	-29.7264	2255.7	BOX-CORER	63
94.	09/07/16	13:05	58.4108	-30.1042	2178	CTD	64
95.	09/07/16	14:49	58.4108	-30.1042	2178	SHIPEK	64
96.	09/07/16	15:19	58.4108	-30.1042	2178	BOX-CORER	64
97.	09/07/16	17:45	58.5493	-30.3665	1615	CTD	65
98.	09/07/16	21:16	58.7264	-30.6994	1451	CTD	66
99.	10/07/16	00:29	58.8463	-31.2697	1483	CTD	67
100.	10/07/16	03:54	58.9104	-31.9120	1695	CTD	68
101.	10/07/16	05:27	58.9097	-31.9117	1699	BOX-CORER	68
102.	10/07/16	06:37	58.9104	-31.9120	1695	SHIPEK	68X
103.	10/07/16	08:29	58.9752	-32.5549	1881	CTD	69
104.	10/07/16	10:15	58.9749	-32.5560	1888	BOX-CORER	69
105.	10/07/16	12:08	59.0410	-33.1924	2284	CTD	70
106.	10/07/16	13:55	59.0423	-33.1920	2291	SVP	70
107.	10/07/16	14:05	59.0412	-33.1928	2294	BOX-CORER	70
108.	10/07/16	16:05	59.1011	-33.8338	2290	CTD	71
109.	10/07/16	17:57	59.1010	-33.8341	2298	BOX-CORER	71
110.	10/07/16	21:28	59.1664	-34.4763	2519	CTD	72
111.	10/07/16	23:10	59.1663	-34.4745	2505	PROVOR	72
112.	10/07/16	23:30	59.1662	-34.4763	2508	BOX-CORER	72
113.	11/07/16	01:25	59.2336	-35.1140	2991	CTD	73
114.	11/07/16	03:43	59.2330	-35.1142	3000	BOX-CORER	73
115.	11/07/16	05:30	59.2994	-35.7623	3100	CTD	74
116.	11/07/16	07:40	59.2991	-35.7629	3104	BOX-CORER	74
117.	11/07/16	09:45	59.3635	-36.3980	3095	CTD	75
118.	11/07/16	12:00	59.3617	-36.3940	3097	DEEP ARVOR	75
119.	11/07/16	12:00	59.3617	-36.3940	3097	DEEP ARVOR	75
120.	11/07/16	12:18	59.3628	-36.3990	3101	BOX-CORER	75
121.	11/07/16	14:13	59.4276	-37.0386	3111	CTD	76
122.	11/07/16	16:33	59.4276	-37.0385	3117	SVP	76
123.	11/07/16	16:43	59.4275	-37.0401	3122	BOX-CORER	76
124.	11/07/16	18:42	59.4922	-37.6779	3112	CTD	77
125.	11/07/16	21:12	59.4911	-37.6859	3118	BOX-CORER	77
126.	11/07/16	23:08	59.5596	-38.3187	3041	CTD	78
127.	12/07/16	01:30	59.5607	-38.3165	3042	PROVOR	78
128.	12/07/16	01:40	59.5584	-38.3167	3048	BOX-CORER	78
129.	12/07/16	03:33	59.6247	-38.9582	2926	CTD	79
130.	12/07/16	05:49	59.6246	-38.9599	2935	BOX-CORER	79
131.	12/07/16	06:48	59.6542	-39.2773	2860	CTD	80
132.	12/07/16	08:47	59.6548	-39.2794	2869	BOX-CORER	80
133.	12/07/16	09:57	59.6856	-39.6001	2795	CTD	81
134.	12/07/16	12:13	59.6849	-39.6000	2789	BOX-CORER	81
135.	12/07/16	13:15	59.7049	-39.9187	2734	CTD	82
136.	12/07/16	16:17	59.7242	-40.2532	2656	CTD	83
137.	12/07/16	18:21	59.7245	-40.2527	2667	BOX-CORER	83
138.	12/07/16	19:27	59.7399	-40.5808	2630	CTD	84
139.	12/07/16	21:37	59.7395	-40.5783	2629	BOX-CORER	84
140.	12/07/16	22:33	59.7576	-40.9072	2269	CTD	85
141.	12/07/16	00:17	59.7575	-40.9067	2285	SVP	85
142.	13/07/16	00:27	59.7563	-40.9074	2287	BOX-CORER	85
143.	13/07/16	02:55	59.7718	-41.2951	2041	CTD	86

144.	13/07/16	04:43	59.7730	-41.2932	2053	BOX-CORER	86
145.	13/07/16	05:50	59.7978	-41.7281	1846	CTD	87
146.	13/07/16	07:32	59.7979	-41.7261	1862	BOX-CORER	87
147.	13/07/16	08:22	59.7972	-42.0032	1724	CTD	88
148.	13/07/16	09:53	59.8003	-42.0017	1734	SVP	88
149.	13/07/16	11:00	59.8084	-42.2341	1218	CTD	89
150.	13/07/16	12:45	59.8160	-42.2751	899	CTD	90
151.	13/07/16	14:22	59.8182	-42.3131	549	CTD	91
152.	13/07/16	15:34	59.8215	-42.3979	307	CTD	92
153.	13/07/16	16:43	59.8308	-42.5201	228	CTD	93
154.	13/07/16	17:36	59.8458	-42.6006	201	CTD	94
155.	13/07/16	18:32	59.8595	-42.7012	184	CTD	95
156.	13/07/16	19:30	59.8758	-42.7955	184	CTD	96
157.	13/07/16	20:38	59.8913	-42.9058	184	CTD	97
158.	13/07/16	21:15	59.8912	-42.9078	186	SHIPEK	97
159.	13/07/16	22:00	59.9038	-43.0041	170	CTD	98
160.	13/07/16	22:54	59.9130	-43.0754	161	CTD	99
161.	18/07/16	07:30	58.9712	-32.0970	1706	ASFAR2	
162.	18/07/16	15:10	58.5446	-30.1872	1848	ASFAR1	
163.	18/07/16	17:16	58.5470	-30.1831	1707	CTD	100
164.	18/07/16	19:00	58.5446	-30.1872	1848	ASFAR3	100
165.	20/07/16	02:53	56.6562	-29.6460	2606	BOX-CORER	202
166.	20/07/16	10:27	56.2751	-31.2927	2391	BOX-CORER	204
167.	20/07/16	17:52	55.9134	-32.8118	2230	BOX-CORER	206
168.	21/07/16	01:24	55.3491	-34.8138	2212	CTD	101
169.	21/07/16	03:17	55.3489	-34.8138	2180	BOX-CORER	101
170.	21/07/16	07:12	55.6714	-34.5708	1460	CTD	102
171.	21/07/16	10:03	55.9076	-34.3939	1834	CTD	103
172.	21/07/16	11:47	55.9075	-34.3939	1856	BOX-CORER	103
173.	21/07/16	16:06	56.3988	-34.0208	1709	CTD	104
174.	21/07/16	19:23	56.6353	-33.7130	1299	CTD	105
175.	21/07/16	21:25	56.7021	-33.6260	1833	CTD	106
176.	21/07/16	23:04	56.7249	-33.5939	2424	CTD	107
177.	22/07/16	01:05	56.7250	-33.5941	2395	BOX-CORER	107
178.	22/07/16	02:42	56.7245	-33.5927	2377	ARVOR	107
179.	22/07/16	02:42	56.7245	-33.5927	2377	ARVOR	107
180.	22/07/16	03:20	56.7811	-33.5242	1691	CTD	108
181.	22/07/16	04:54	56.7998	-33.4845	1097	CTD	109
182.	22/07/16	06:39	56.8502	-33.4331	1896	CTD	110
183.	22/07/16	08:02	56.8505	-33.4335	1916	BOX-COER	110
184.	22/07/16	09:56	56.9098	-33.3543	1925	CTD	111
185.	22/07/16	11:33	56.9098	-33.3547	1945	BOX-CORER	111
186.	22/07/16	13:22	56.9499	-33.3035	1645	CTD	112
187.	22/07/16	16:29	57.1753	-33.0018	1071	CTD	113
188.	22/07/16	20:46	57.5776	-32.4779	1731	CTD	114
189.	22/07/16	22:20	57.5777	-32.4777	1737	BOX-CORER	114
190.	23/07/16	01:05	57.8003	-32.2167	1433	CTD	115
191.	23/07/16	05:22	58.2003	-31.7504	1592	CTD	116
192.	23/07/16	09:03	58.5303	-31.4223	1663	CTD	117
193.	23/07/16	10:35	58.5304	-31.4223	1656	BOX-CORER	117
194.	23/07/16	13:42	58.8452	-31.2696	1464	CTD	118
195.	23/07/16	17:45	58.9706	-32.0975	1699	CTD	119
196.	23/07/16	19:30	58.9711	-32.0962	1707	ASFAR4	119
197.	23/07/16	19:50	58.9733	-32.0970	1710	ARVOR	119
198.	24/07/16	00:54	58.8451	-31.2687	1454	CTD	120
199.	24/07/16	02:15	58.8454	-31.2689	1394	SHIPEK	120
200.	24/07/16	04:20	58.8454	-31.2689	1400	BOX-CORER	120b

201.	24/07/16	06:25	59.0500	-30.9527	1303	CTD	121
202.	24/07/16	09:38	59.3003	-30.5696	1321	CTD	122
203.	24/07/16	12:45	59.5496	-30.1883	1240	CTD	123
204.	24/07/16	15:45	59.8000	-29.8062	998	CTD	124
205.	24/07/16	20:09	60.2400	-29.1293	704	CTD	125
206.	24/07/16	22:44	60.4699	-28.7782	1275	CTD	126
207.	24/07/16	23:58	60.4698	-28.7782	1265	BOX-CORER	126
208.	25/07/16	01:52	60.5992	-28.5793	792	CTD	127
209.	25/07/16	05:36	60.9028	-28.1180	662	CTD	128
210.	25/07/16	09:10	61.2014	-27.6590	680	CTD	129
211.	25/07/16	12:49	61.4989	-27.1756	714	CTD	130
212.	25/07/16	13:45	61.4988	-27.1755	717	SHIPEK	130
213.	25/07/16	17:11	61.7998	-26.6917	1047	CTD	131
214.	25/07/16	21:33	62.1001	-26.2056	775	CTD	132
215.	25/07/16	22:15	62.1010	-26.2068	760	SVP	132
216.	26/07/16	01:20	62.4000	-25.7221	682	CTD	133
217.	26/07/16	04:58	62.7000	-25.2371	613	CTD	134
218.	26/07/16	05:34	62.6999	-25.2371	618	SHIPEK	134
219.	26/07/16	09:03	63.0002	-24.7521	257	CTD	135
220.	26/07/16	13:45	63.4166	-23.9172	142	CTD	136
221.	26/07/16	14:16	63.4165	-23.9171	143	SHIPEK	136

### 2.3.1. CTD

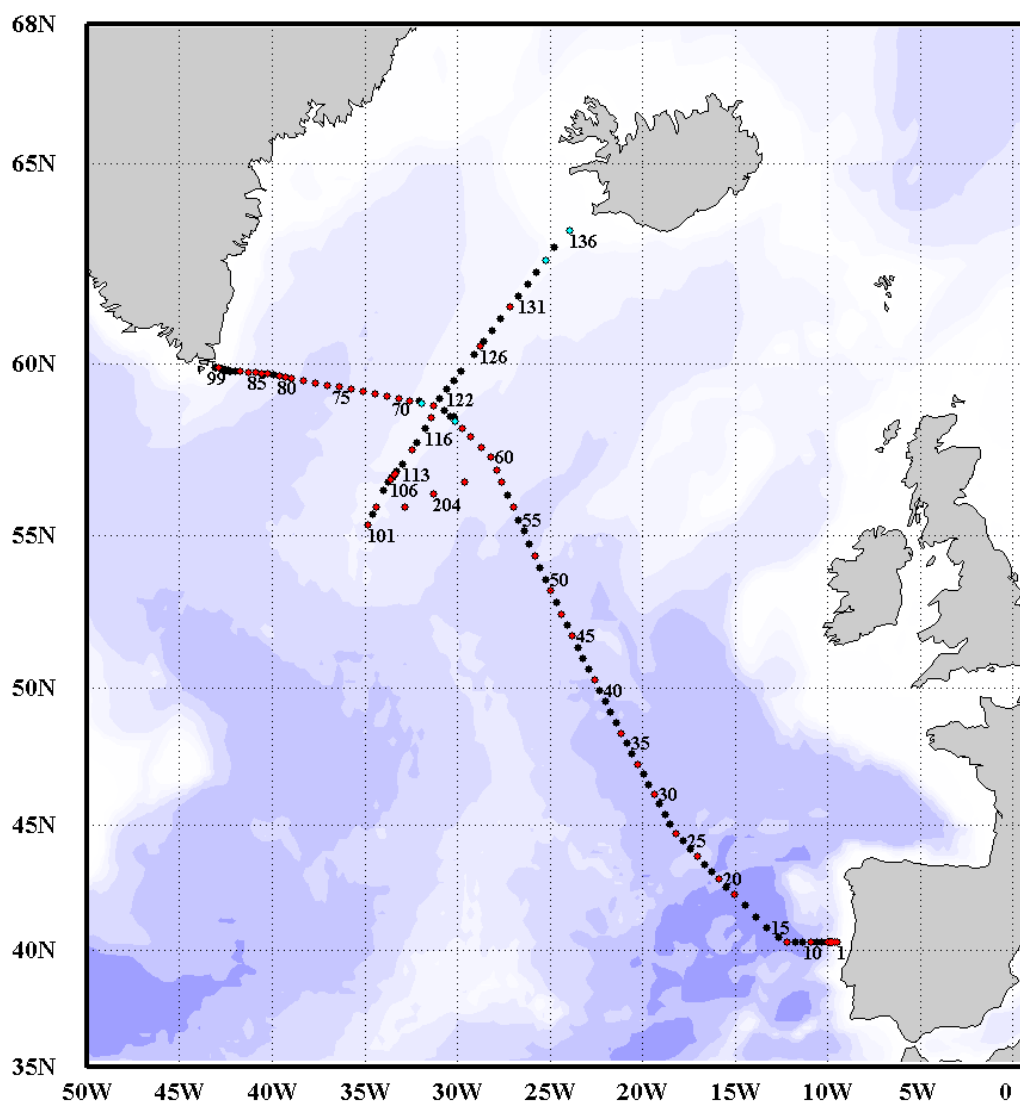
During the cruise, we used the LOPS CTD frame with 28 bottles of 8 liters.



The CTD cable was new and installed on board under pressure with a capstan, just before the start of the cruise.



At the end of the cruise, 137 CTD profiles were acquired.



*Figure 5: Hydrographic and sediment stations during BOCATS cruise.*

Hydrographic (CTD) and sediment stations during BOCATS cruise. Positions of CTD stations are in black, Box-corer samples are in red and Shipek samples in green.

### 2.3.2. LADCP

Two yellow LADCPs (Lowered Acoustic Doppler Current Profiler) were installed on the CTD frame and can be seen on the picture of the rosette (Figure 6): a WH150kHz looking down and a WH300 looking up.



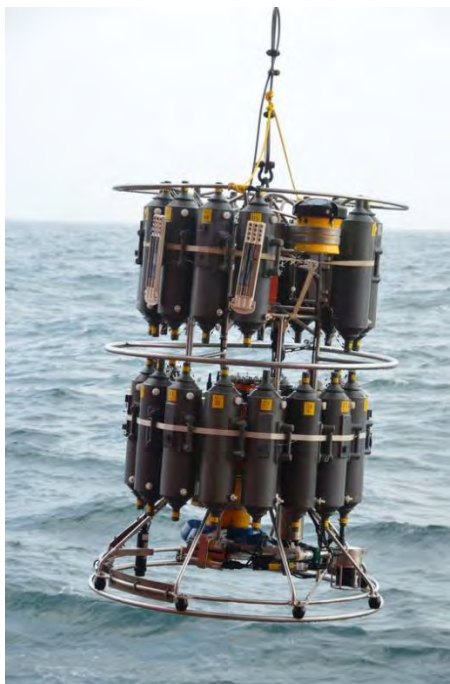


Figure 6: LADCP on CTD frame.

All the profiles were processed by P. Lherminier with the LDEO software (version 10.16) written by M. Visbeck and G. Krahmann. The bottom velocities were given to the sediment team in real time to interpret their data.

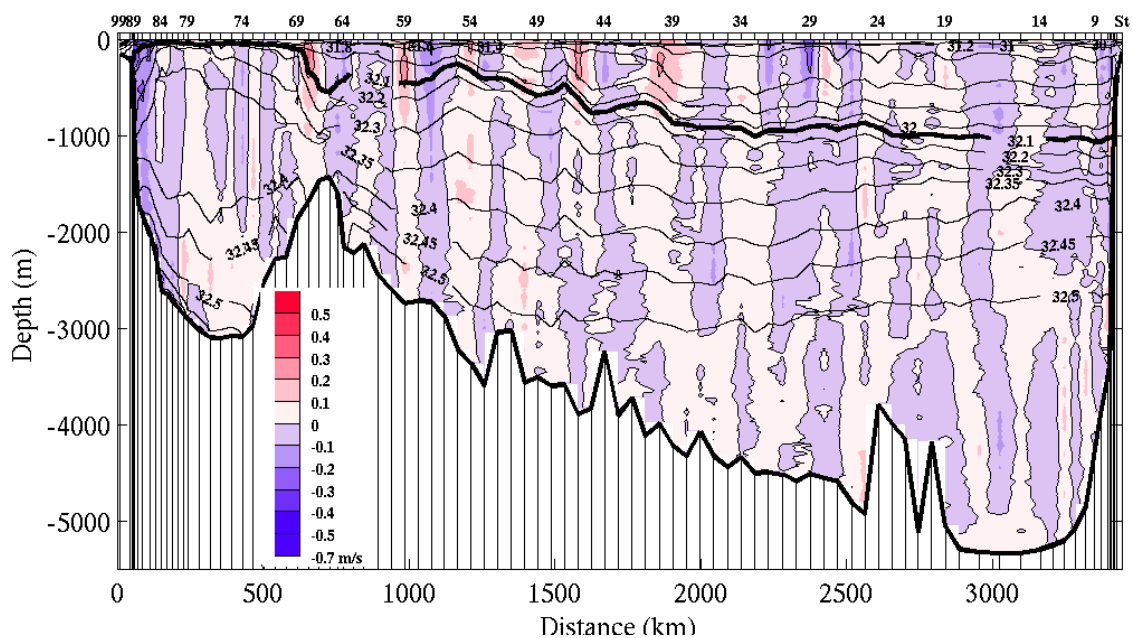
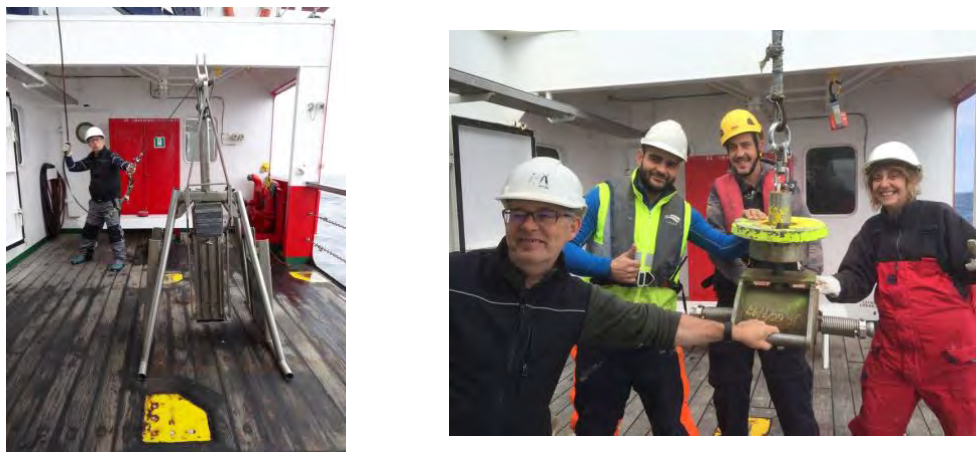


Figure 7: BOCATS-OVIDE section of currents measured by the LADCPs (interpolated from stations).

### 2.3.3. Sediment sampling

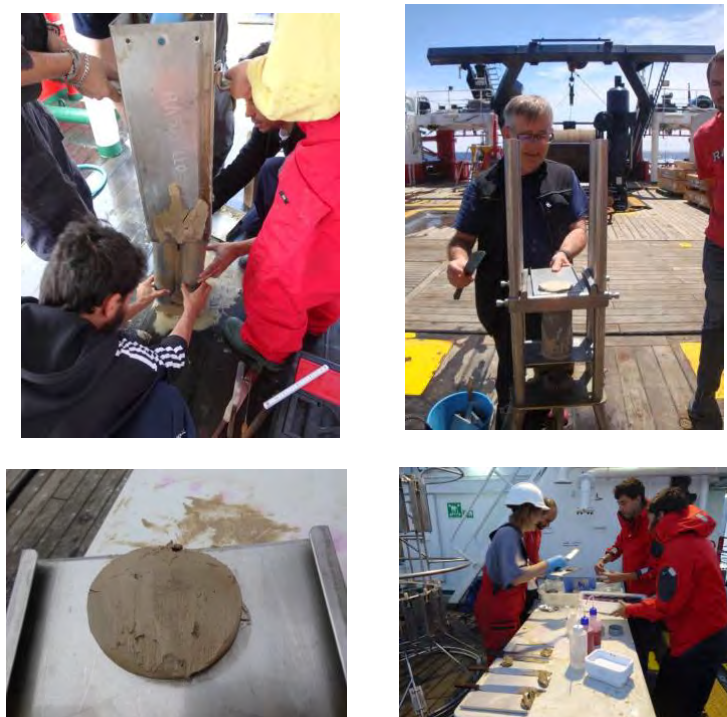
Two corers were used during the cruise:



*Figure 8: Shipek corer and Box corer.*

The positions of the coring are shown in figure 5.

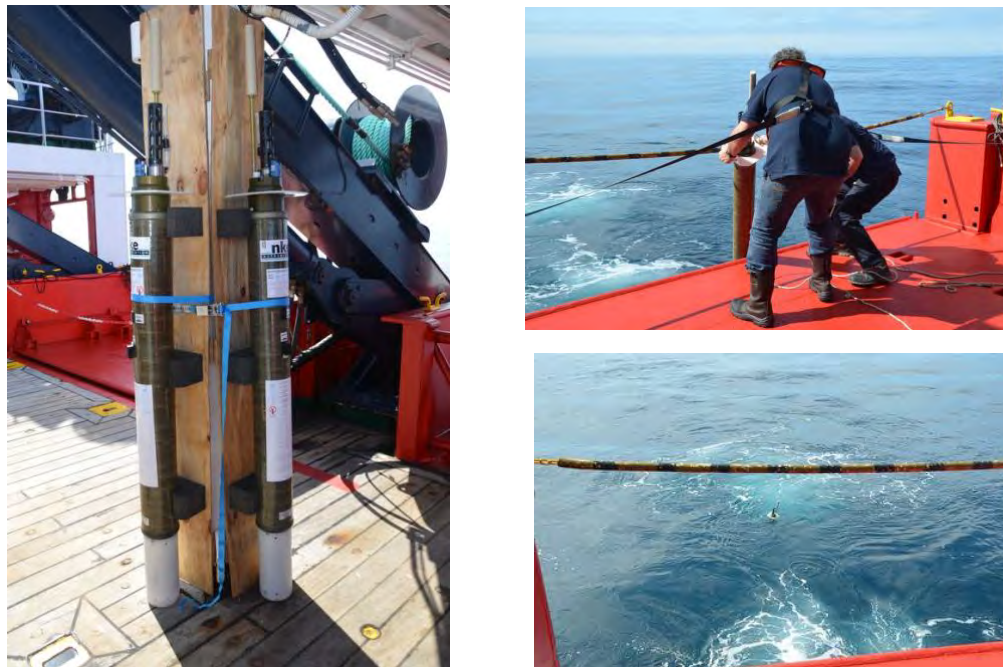
Recovered box core was sub-sampled using 4 PVC tubes (foraminifera, sedimentology, geochemistry and chronology). Two tubes were sampled every 1 cm. Foraminifera samples (first tube) was stained with Rose of Bengual to distinguish alive and dead specimen. 1 cm samples from second tube were stored in plastic bags properly labelled.



*Figure 9: Sediment sampling operations.*

### 2.3.4. Float

Three types of float were launched: Provor CTS3-DO, Deep Arvor and Arvor (see fig. 13).



*Figure 10: Preparing and launching a Deep Arvor.*

The table below gives the drop-off positions of the floats:

Type	Serial number	WMO number	Station	Deploy Time	Deploy Latitude	Deploy Longitude	Sea state	Deploy Bathy.
CTS3 DO	OIN-12-DO-S31-01	6901457	48	05/07/2016 23:54	52°52,54 N	24°38,72 W	moderate	3646m
CTS3 DO	OIN-14-DO-S31-06	6901755	62	09/07/2016 03:45	57°57,86 N	29°16,08 W	very rough	2144m
CTS3 DO	OIN-14-DO-S31-05	6901754	72	10/07/2016 23:10	59°09,98 N	34°28,47 W	moderate	2505m
DEEP	OIN-015-ARDP-09	6901760	75	11/07/2016 12:00	59°22,90 N	36°23,64 W	calm	3097m
DEEP	OIN-015-ARDP-11	6901762	75	11/07/2016 12:00	59°22,09 N	36°23,61 W	calm	3097m
CTS3 DO	OIN-14-DO-S31-04	6901753	78	12/07/2016 01:30	59°33,64 N	38°18,99W	moderate	3042m
ARVOR	OIN-AR14-058	6901719	107	22/07/2016 02:42	56° 43,47 N	33° 35,56 W	rough	2377m
ARVOR	OIN-AR14-059	6901720	107	22/07/2016 02:42	56° 43,47 N	33° 35,56 W	rough	2377m
ARVOR	OIN-AR14-065	6901726	119	23/07/2016 19:50	58° 58,40 N	32° 05,82 W	calm	1710m

### 2.3.5. SVP

During the cruise, five weather buoys given by Meteo France were launched (see fig. 13).

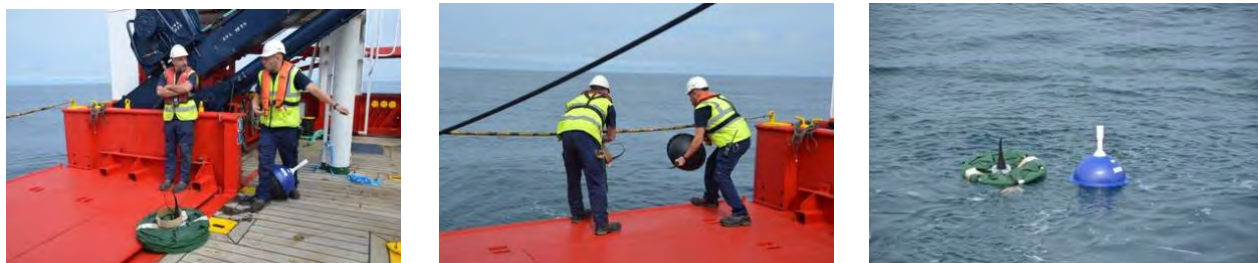


Figure 11: Launching a SVP.

The table below specifies the drop-off positions of the SVP:

SVP	S/N	IMEI	Deploy time	Latitude	Longitude	Depth (m)	Station	OMM
1	J07AHZ	300234063738740	10/07/16 13:55	59°02,54 N	33°11,52 W	2291	70	6401552
2	J079OB	300234063730820	11/07/2016 16:33	59°25,65 N	37°02,31 W	3111	76	6501557
3	J07AHV	300234063739800	12/07/16 00:17	59°45,45 N	40°54,40 W	2285	85	6501556
4	J07A24	300234063737900	13/07/16 09:53	59°48,02 N	42°00,10 W	1734	88	6501558
5	121390	300234063121390	25/07/16 22:15	62°06,06 N	26°12,41 W	760	132	6401500

### 2.3.6. ASFAR

Two Asfar structures (Autonomous System For Argo float Release) were recovered and replaced. The ASFAR frame is used to release Argo floats at predetermined dates. Each frame is equipped with 4 Arvor floats (see figure 12).

The table below shows the drop-off positions of the Asfar:

	CTD st	Deploy time	Deploy Lat.	Deploy Lon.	Bathymetry
ASFAR 03	100	18/07/16 19:00	58° 32.674 N	030° 11.235 W	1848 m
ASFAR 04	119	23/07/2016 19:30	58° 58.269 N	032° 05.775 W	1707 m



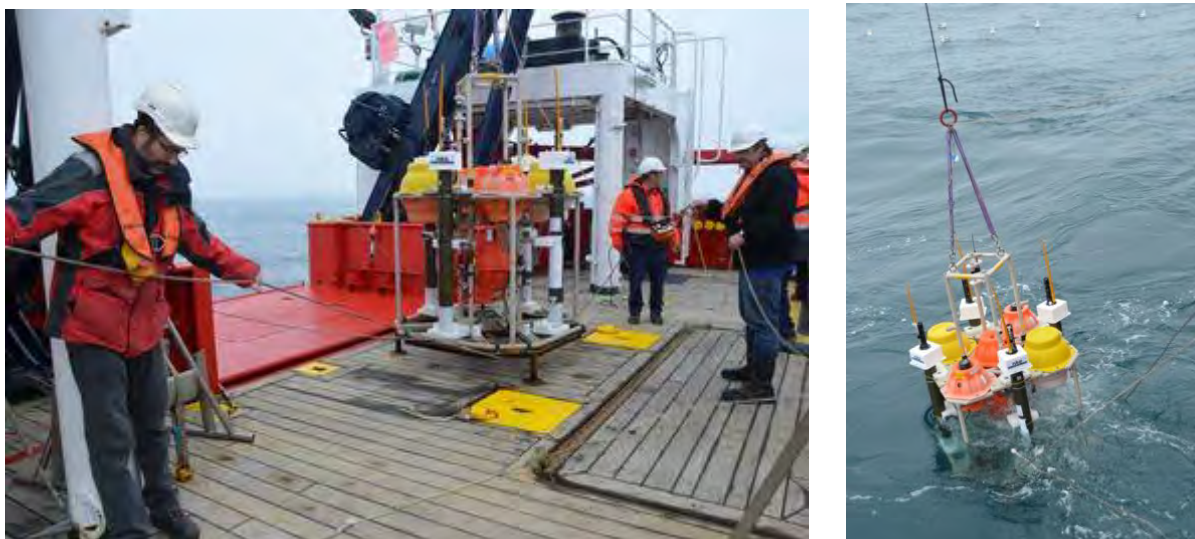


Figure 12: Preparing and launching ASFAR.

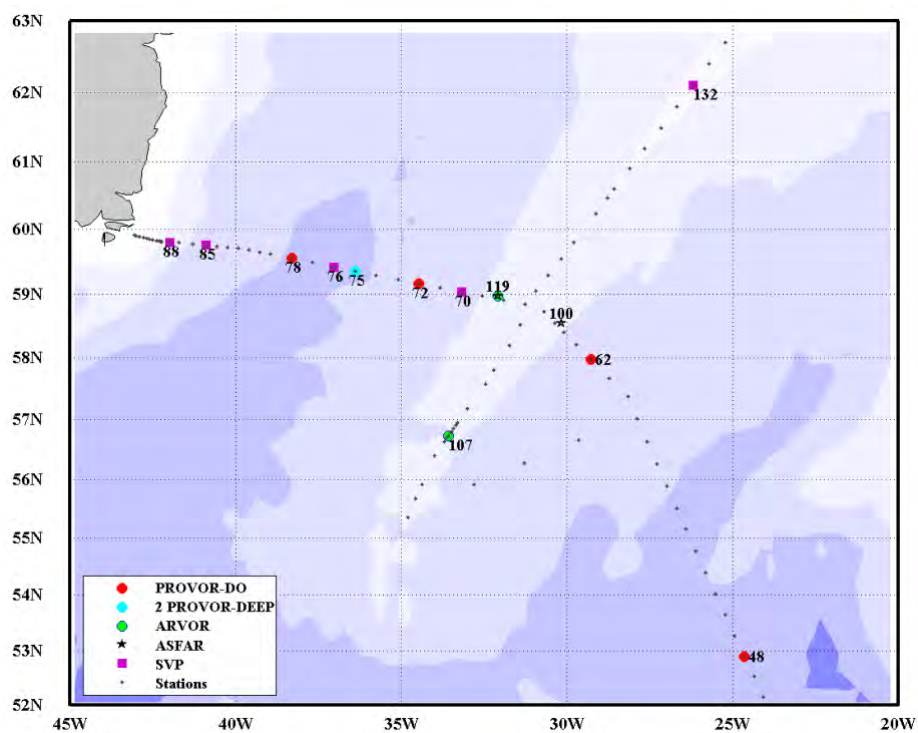


Figure 13: Position of the Float and Asfar deployments with station numbers.

At station 107, in Bight Fracture Zone, 2 Arvor were deployed.

### 2.3.7. SADCP

Two SADCPs (Ocean Surveyor model of RDInstruments) are installed on the Sarmiento de Gamboa in a “quillas” that can be lowered at 10m below the surface: one at 75 kHz and one at 150 kHz (called OS75 and OS150 respectively). Both were connected with a cable to ensure synchronization, the OS75 being the master.

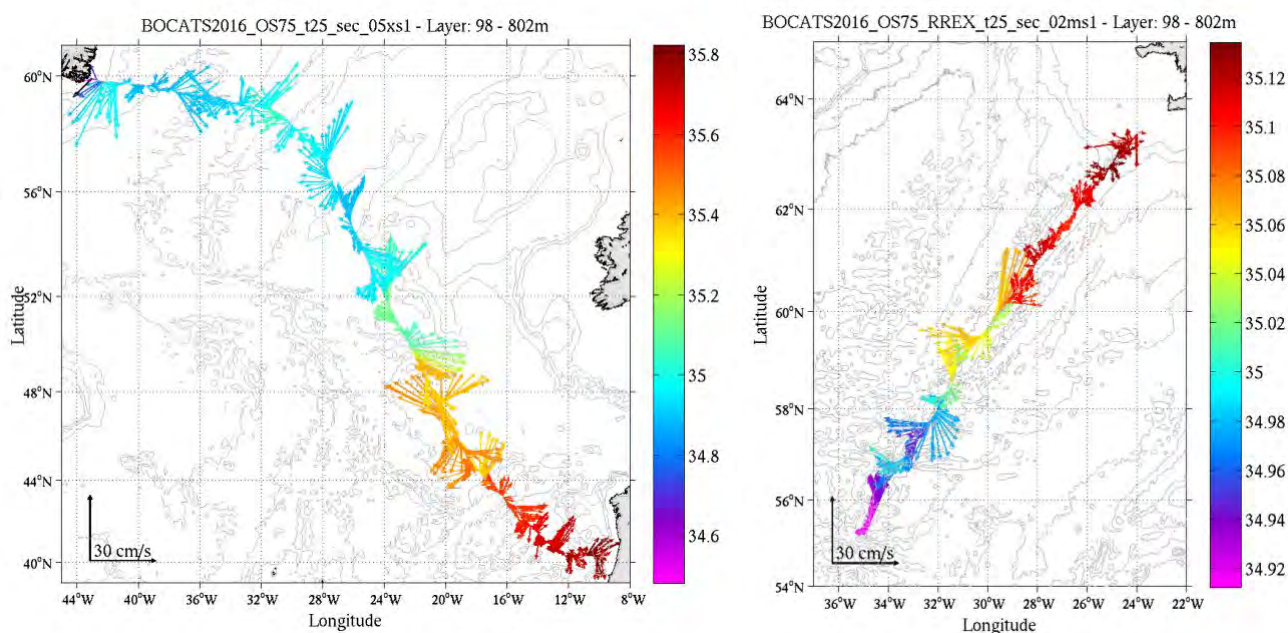


Figure 14: Current averaged between 100 m and 800 m along the BOCATS-OVIDE section (left) and RREX ridge section (right), measured by the OS75.

### 2.3.8. Other chemical analyzes

Other chemical parameters were also taken from the CTD bottles and analyzed during BOCATS by the IIM Vigo chemists.

Parameter	Number of sampling
CFC	504
NO <sub>2</sub> /CH <sub>4</sub>	709
pH	2476
C <sub>T</sub>	307
DOC	329
Alkalinity	1010
Nutrients	2502
<sup>18</sup> O and <sup>13</sup> O	288



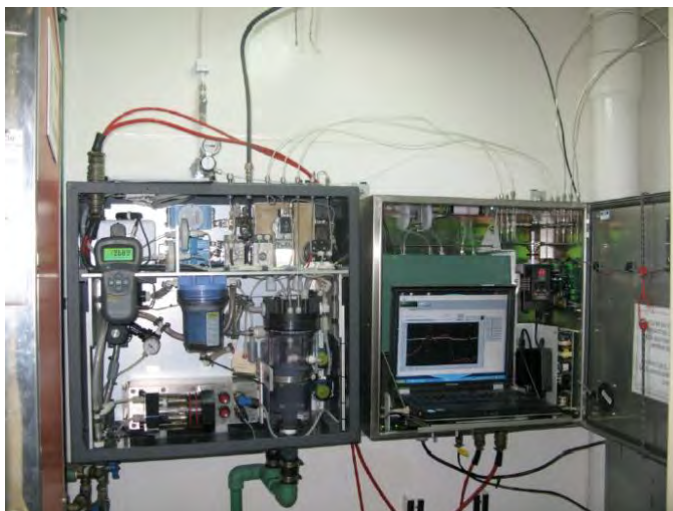
Most analytical stations were installed in the chemical laboratory of the ship on the main deck.



*Figure 15: Sampling and analyzes during the cruise.*

### **2.3.9. Ferry box**

Temperature and salinity surface, partial pressure of CO<sub>2</sub> are recorded directly from the ferry box.



*Figure 16: Ferry box on board Sarmiento.*

The plot below shows the monitoring of the salinity of thermosalinograph. We sampled directly in the circuit of the ferry box and these sampling were analyzed with a Guildline salinometer to compare. In green is indicated the difference between the 2 measurements.

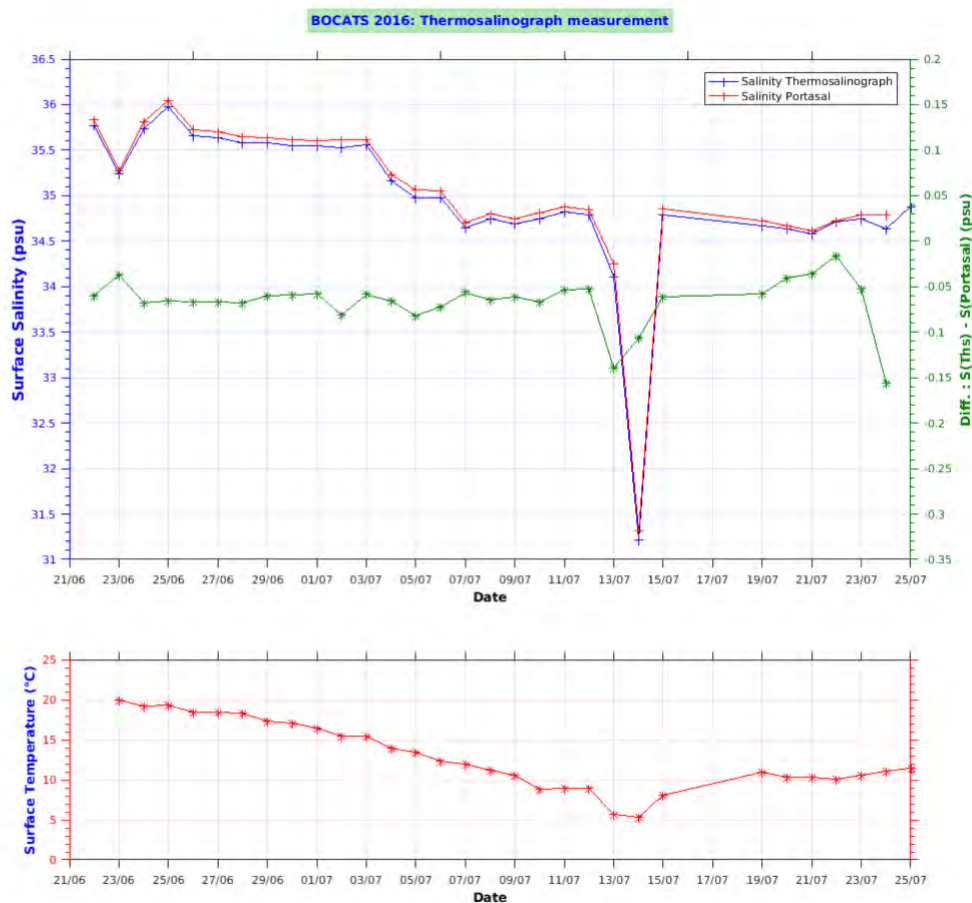


Figure 17: Monitoring the thermosalinograph.

### 3. CTD-O<sub>2</sub> measurement calibration

#### 3.1. CTD-O<sub>2</sub> data acquisition

For hydrology acquisition, we used our LOPS frame with 28 bottles of 8 liters and a SBE911+ ctd. The frame is also equipped with 2 LADCP (150 and 300 kHz) and electronic reversing sensors.



*Figure 18: LOPS CTD frame.*

##### 3.1.1. Technical summary

The same Seabird 911+ CTD probe (s/n. 813) was used throughout the cruise. It was equipped with two sets of T, C, and O<sub>2</sub> sensors. We found also on the frame 2 LADCP and 4 SIS reversing sensors.

The CTD sensors used, during the cruise, are as follows:

	Primary sensors	Secondary sensors
Temperature (SBE3+)	s/n 2911	s/n 4594
Conductivity (SBE4c)	s/n 3194	s/n 3166
Oxygen (SBE43)	s/n 1402	s/n 526

Electronics mounted on the LOPS frame:

PASH 6000 Rosette, top	s/n 461	PASH 6000 Rosette, bottom	s/n 462
IXSEA Pinger	s/n 1111	Benthos Altimeter PSA-916	s/n 47741
Downward-looking ADCP:	RDI 150 kHz WorkHorse (s/n 23909)		
Upward-looking ADCP:	RDI 300 kHz WorkHorse (s/n 12492, st 0; s/n 2002, st 1 to 136)		
SIS sensors	BT3	BT5	
reversing pressure meter	s/n 6660 (st 0 à 70)	s/n 6661	
	s/n 6664 (st 71 to 136)		
reversing thermometer	s/n 1726	s/n 1750	

The CTD casts start with a round trip at a depth of 30 m to remove the air bubbles in the 2 circuits of the sensors. The CTD profile then begins from the surface to a distance of 15 meters from the bottom. At each cast, the electro-mechanical cable is unwound and wound at a speed of 1 meter per second (0.5 m/s for the first 100 meters).

The downcast of the probe is monitored on a screen with the Sepia software that traces the echoes of the pinger mounted on the frame, allowing a continuous positioning of the probe relative to the bottom. The final bottom approach is performed using the Benthos altimeter, as soon as it has 'latched' the bottom at a distance of 30-50 m.

During the upcast, the frame is stopped at predefined levels of closure of the 28 sampling bottles.

In addition to these instruments, two ADCP (Acoustic Doppler Current Profiler) WorkHorse are mounted on the frame to obtain vertical profiles of current velocity, a downward-looking (LOPS s/n 23909, master) and an upward-looking (LOPS s/n 2002, slave).



*Figure 19: Upper LADCP on CTD frame.*

### 3.1.2. Technical problems during the cruise

18/06: Test station. We tested the new CTD cable with a ballast of 500 kg. Problem of winding the cable on the winch. Go back to Vigo.

20/06: Rewinding the cable under pressure with a capstan.

22/06: After station 0, we changed the LADCP 300 kHz (s/n 12492 replaced by s/n 2002) because differences of compasses between the both LADCP.

The data of the LADCP 150 was noisy. We changed the configuration after station 7. The problem was interferences with the altimeter.

28/06: We changed the star cable between the LADCP.

10/07: After station 70, we replaced the SIS reversing pressure sensor on bottle 3 (s/n 6664 replaced s/n 6660).

### 3.1.3. Data processing

The CTD-O<sub>2</sub> sensor signals are transmitted to the LPO's Hydrology acquisition system. This system is designed to run on a PC running Windows 7 for acquisition, visualization and preprocessing with the manufacturer's software (SBE seasave).

This system allows the real time visualization of the different parameters measured and calculated on the profiles, while controlling the quality of the signal transmitted by the probe. All of the data transmitted by the probe, at the rate of 24 cycles per second, is saved to disk.

On board, the probe data were pre-calibrated with Seabird postprocessing software and the LOPS calibration suite developed in Matlab (CADHYAC).



### 3.2. Sampling at the sea

The LOPS CTD frame have 28 bottles of 8 liters when the frame is equipped with two LADCP, 32 otherwise.

The bottles are closed during the upcast of the probe after stopping at the sampling levels. We waited 30 seconds before closing the bottle and the CTD signal was recorded during 8 seconds for generate bottles files. These levels are distributed over the full height of the profile in order to sample all the water masses and the standard levels.



*Figure 20: Sampling after CTD profile.*

As soon as they reach the surface, the samples were taken from each bottle for the numerous analyzes performed on board, in the order recommended by the WOCE instructions. The bottles were sampled according to their chronology from 3 to 30.

The salinity and oxygen samples will be used to calibrate the salinity and dissolved oxygen CTD profiles.

During the cruise, 2579 bottles were closed, 2502 salinity analyzes and 2472 oxygen analyzes were performed.

To estimate the error of the analytical methods, replicates were conducted at some casts by triggering the closure of two bottles at the same sampling level. We thus have 44 salinity and 49 oxygen replicates.

The plot hereafter (fig 21) shows the sampling levels for each CTD profile section by section.



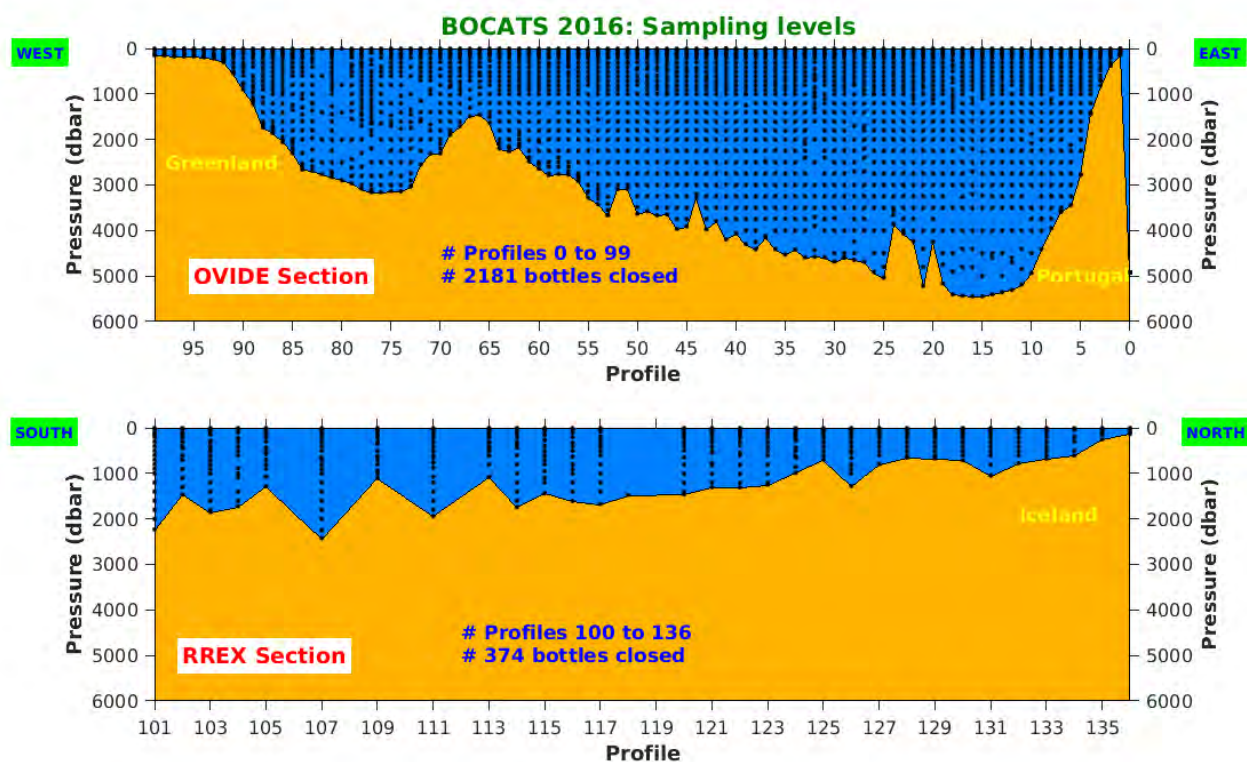


Figure 21: Synoptic chart indicating the sampling levels for CTD.

### 3.3. Analysis of Salinity and Dissolved Oxygen samples

All the salinity and dissolved oxygen samples are analyzed on board, during the cruise, in the LOPS's chemical analysis container, that is equipped with Metrohm 798 titrinos and Guildline Portasal salinometers. Air conditioning allows regulation of the room temperature (20 °C at  $\pm 0.5$  °C). These measurements aim to adjust CTD salinity and oxygen profiles.



Figure 22: Salinity analysis.

The daily standardization of the measuring instruments (salinometers and tritinos) was performed by Pierre Branellec, all salinity analyzes were performed by Michel Hamon

#### 3.3.1. Standardisation of salinometers

All salinity measurements taken during the BOCATS cruise were performed on the same Portasal salinometer (s/n: 71420).

This salinometer was standardized using a set of standard seawater bottles (IAPSO Standard Seawater): batch P156 ( $K_{15} = 0.99984$ ,  $S = 34.994$ , to use before 23/07/2016; see Bacon & al. (1999)). The standardization was verified every morning and after analysis of two casts (56 samples). The standardization results were recorded on salinity analysis sheets.

The salinometer was very stable throughout the cruise and the standardization was adjusted only rarely.



Figure 23: Standard seawater.

### 3.3.2. Salinity analysis

The samples are collected after three successive rinses in 125 ml bottles, which water tightness is guaranteed by a rubber seal. As soon as the collection is finished, the samples are placed in the analysis container with a controlled temperature set to 20 °C ( $\pm 0.5$  °C). The samples are analyzed 20 to 30 hours after collection to allow them to achieve a thermal equilibrium.

The salinity of the samples is determined according to the equation PSS 78 (UNESCO 1981). Throughout the cruise, the temperature of the thermostat bath is fixed at 21 °C.

For each sample, three successive rinses of the cell are performed before making three readings separated each time by a rinse.

During the cruise, we analyzed 2502 salinity samples.

Figure 24 shows the differences in salinity obtained on the replicates validated by the calibration. They were performed at sampling levels between the surface and the bottom and were collected from profile 1 to profile 136. The differences between two salinity measurements were studied for 44 validated replicates: figure 25 shows the histogram.

We observe that, in 68.2 % of the cases, the difference in salinity measured on the two bottles is less than 0.001 and in 97.7 % of the cases it is less than 0.003.

The standard deviation is 0.0011 for all validated replicates, and considering only the replicates performed at a pressure greater than 1000 dbar, the standard deviation is 0.0010.

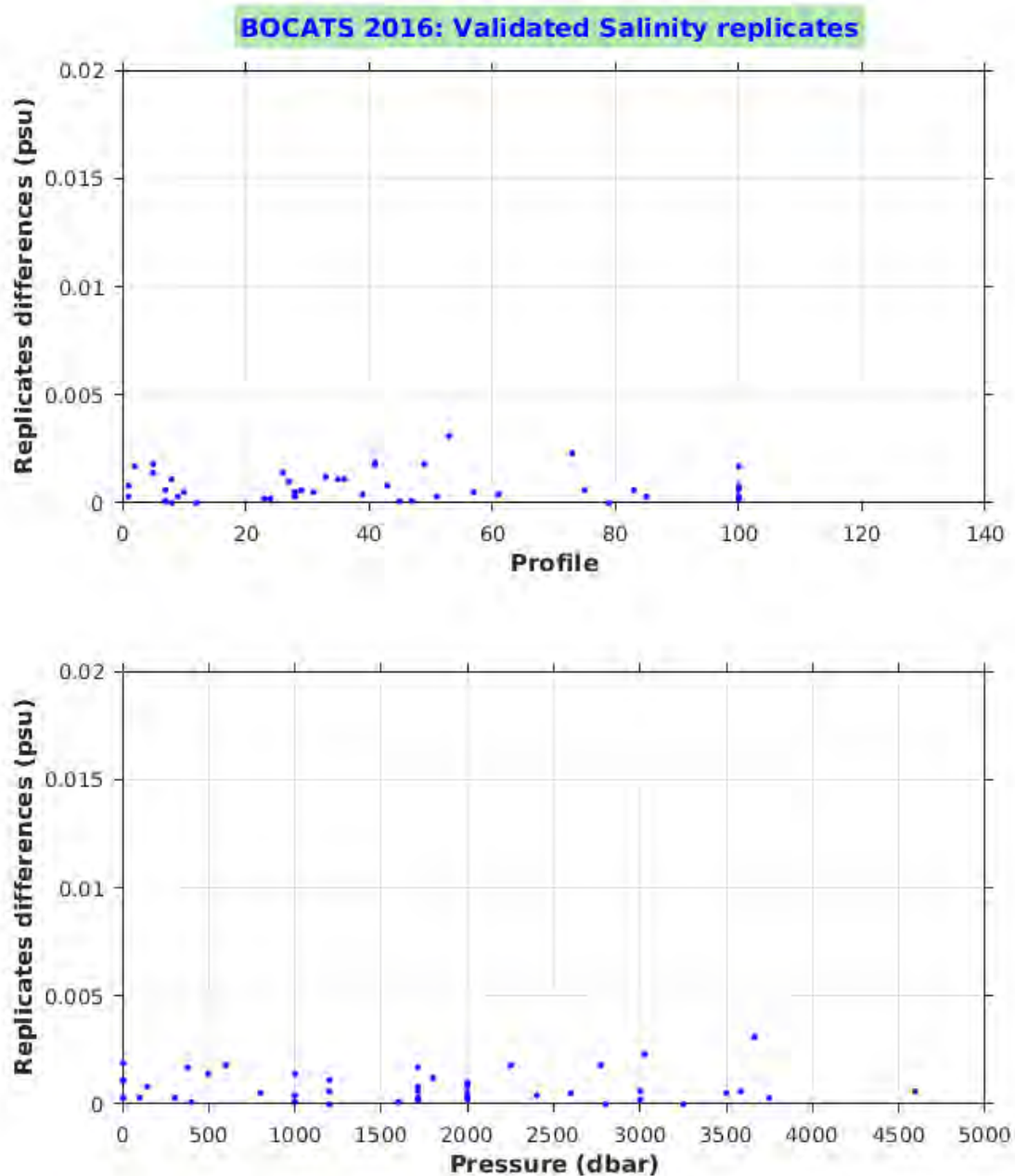


Figure 24: Differences in salinity between two bottles closed at the same level:  
 a) As a function of the profile number of the replicates.  
 b) As a function of the pressure at which the replicate was sampled.

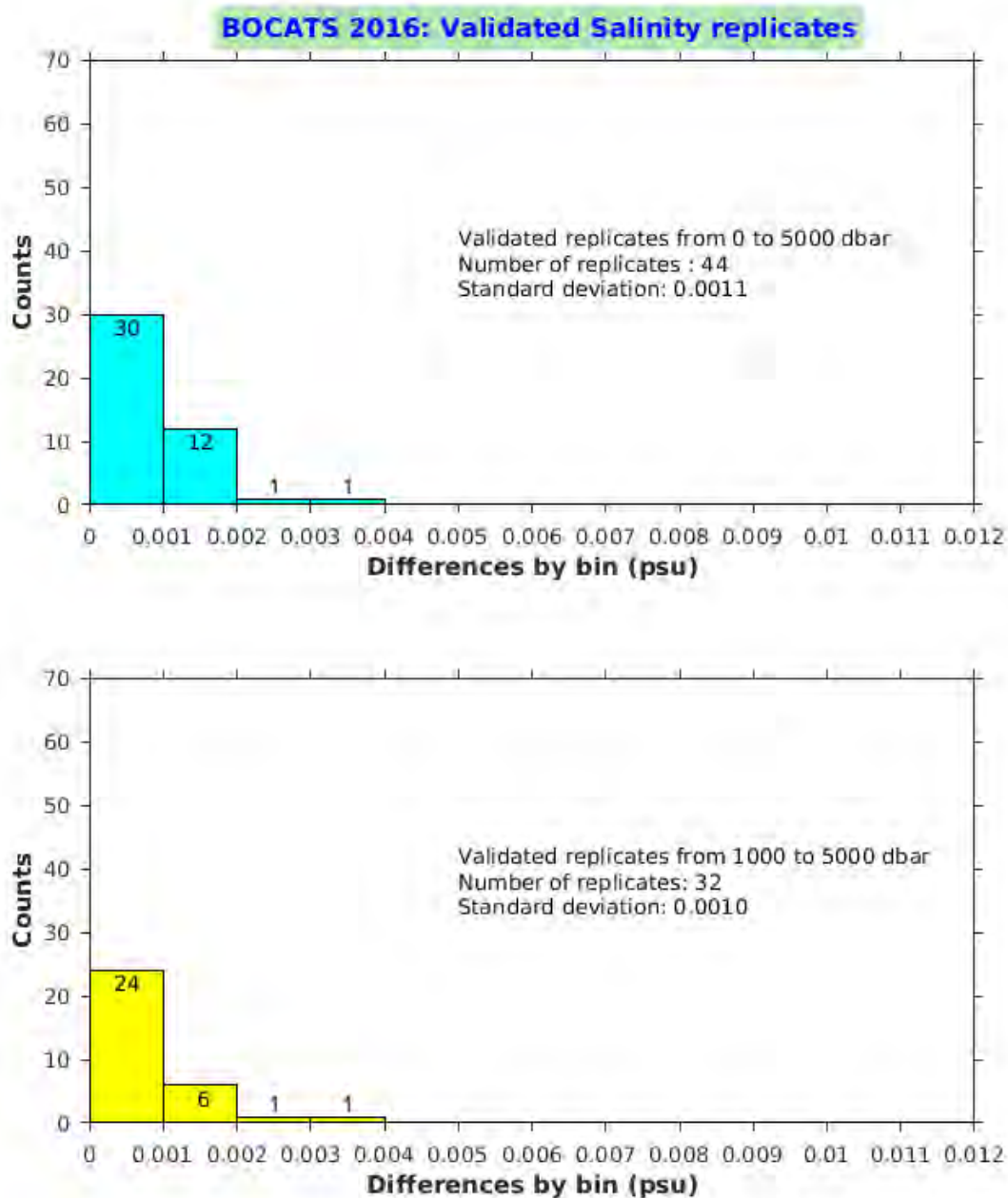


Figure 25: Histogram of the Salinity differences on the replicates:

- a) For the 44 validated replicates of the cruise,
- b) For the 32 validated replicates sampled at a pressure greather than 1000 dbar.



### 3.3.3. Dissolved Oxygen

To analyze the dissolved oxygen, the samples are collected in 120 ml bottles with a plunger cap. After filling the bottle, the temperature of the sample is recorded during overflowing a volume of water three times equivalent of the bottle.

Two reagents ( $\text{MnCl}_2$  and  $\text{NaOH-NaI}$ ) are then added successively and the bottle is capped. Finally, the bottle is shaken for 30 seconds to capture the oxygen in the seawater in the precipitate. Once all the samples are taken, the bottles are turned over one by one to suspend the precipitate another time.

The samples are stored in the laboratory container at a temperature of 20 °C and analyzed within a period of 4 to 24 hours.

The operating conditions and the analysis method conform to the recommendations of WOCE (WOCE Operations Manual, 1991). After acidification in the sampling bottle, the liberated iodine is dosed with a solution of sodium thiosulphate which normality is of the order of 0.02 N. Its normality is determined daily, before the start of the analysis series, by comparison to a potassium iodate solution, which normality, obtained by weighing, is 0.020010.

The dosage is controlled by a 798 Metrohm titrino, a platinum titrode measures the reaction potential and a 20 ml burette delivers the sodium thiosulphate. The volume of thiosulphate necessary for the reduction of the iodine is subtracted from the automatic determination of the inflection point on the potential curve at equivalence.

The daily standardization of the measuring instruments (tritrinos) was performed by Pierre Branellec, all oxygen analyzes were performed by Philippe Le Bot.

During the cruise, we analyzed 2472 oxygen samples.



Figure 26 shows the differences obtained between the measurements performed on the 49 validated replicates and figures 27 and 28 show the histograms (ml/l and  $\mu\text{mol/kg}$ ).

For all the replicates collected between the bottom and the surface, 49.0.% of the differences are less than 0.01 ml/l and 79.6 % are less than 0.02 ml/l for a standard deviation of 0.020 ml/l (0.87  $\mu\text{mol/kg}$ ). By eliminating the levels between the surface and 1000 dbar, the standard deviation is 0.022 ml/l (0.95  $\mu\text{mol/kg}$ ).



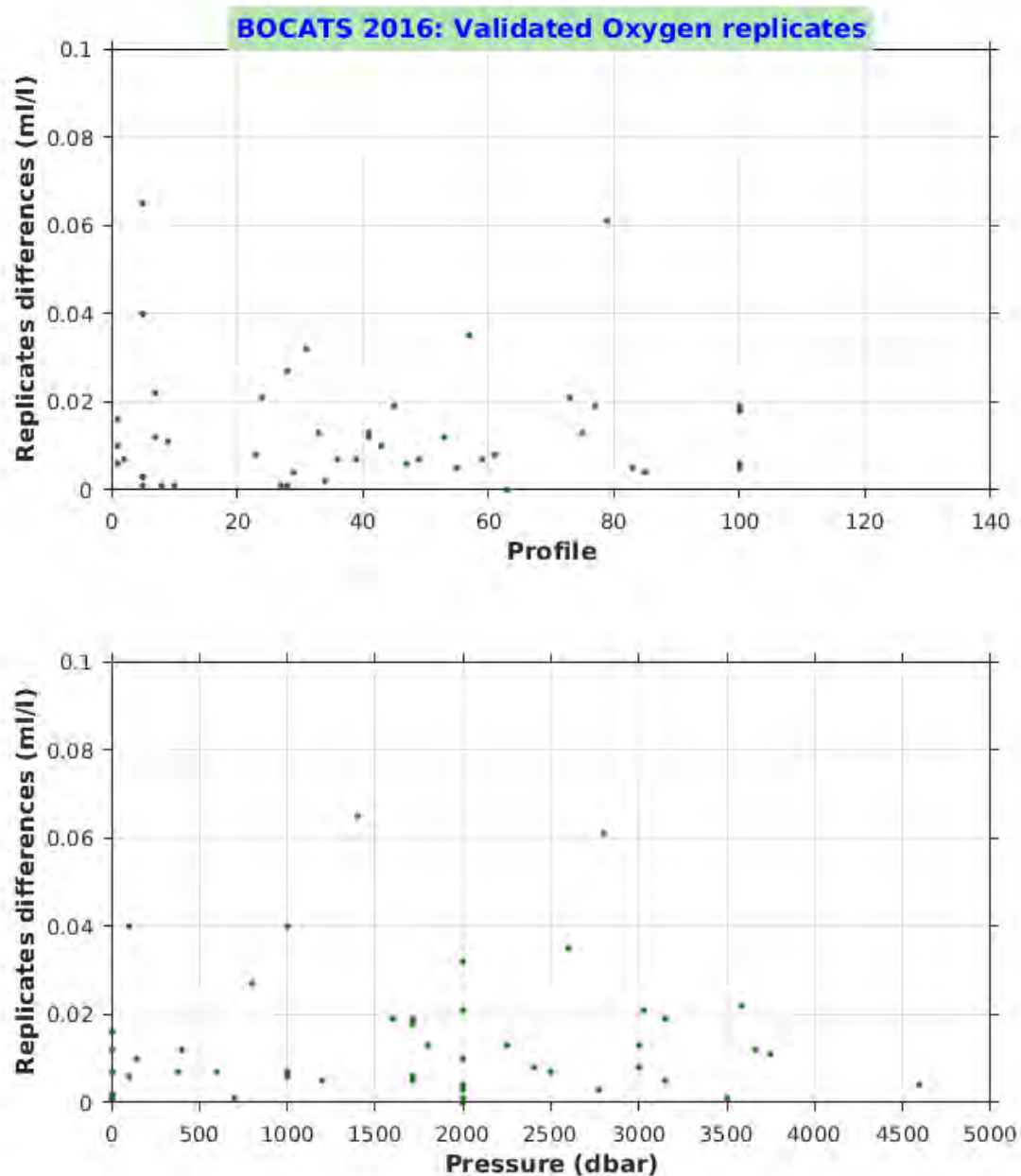


Figure 26: Differences in oxygen between two bottles closed at the same level:  
 a) As a function of the profile number of the replicate,  
 b) As a function of the pressure at which the replicate was sampled.

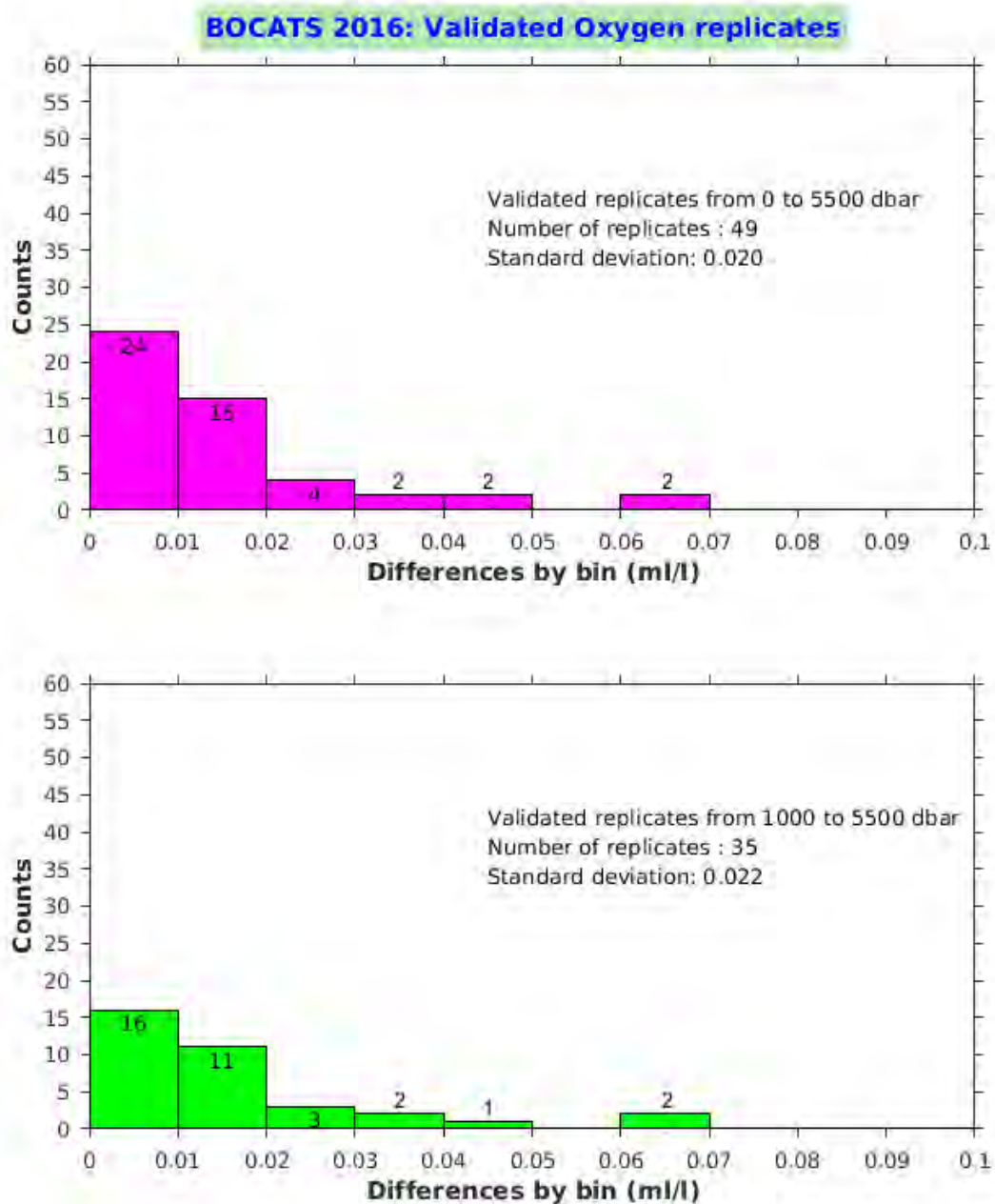


Figure 27: Histogram of the Oxygen differences (ml/l) of the replicates:

- a) For the 49 validated replicates of the cruise,
- b) For the 35 validated replicates samples at a pressure greater than 1000 dbar.

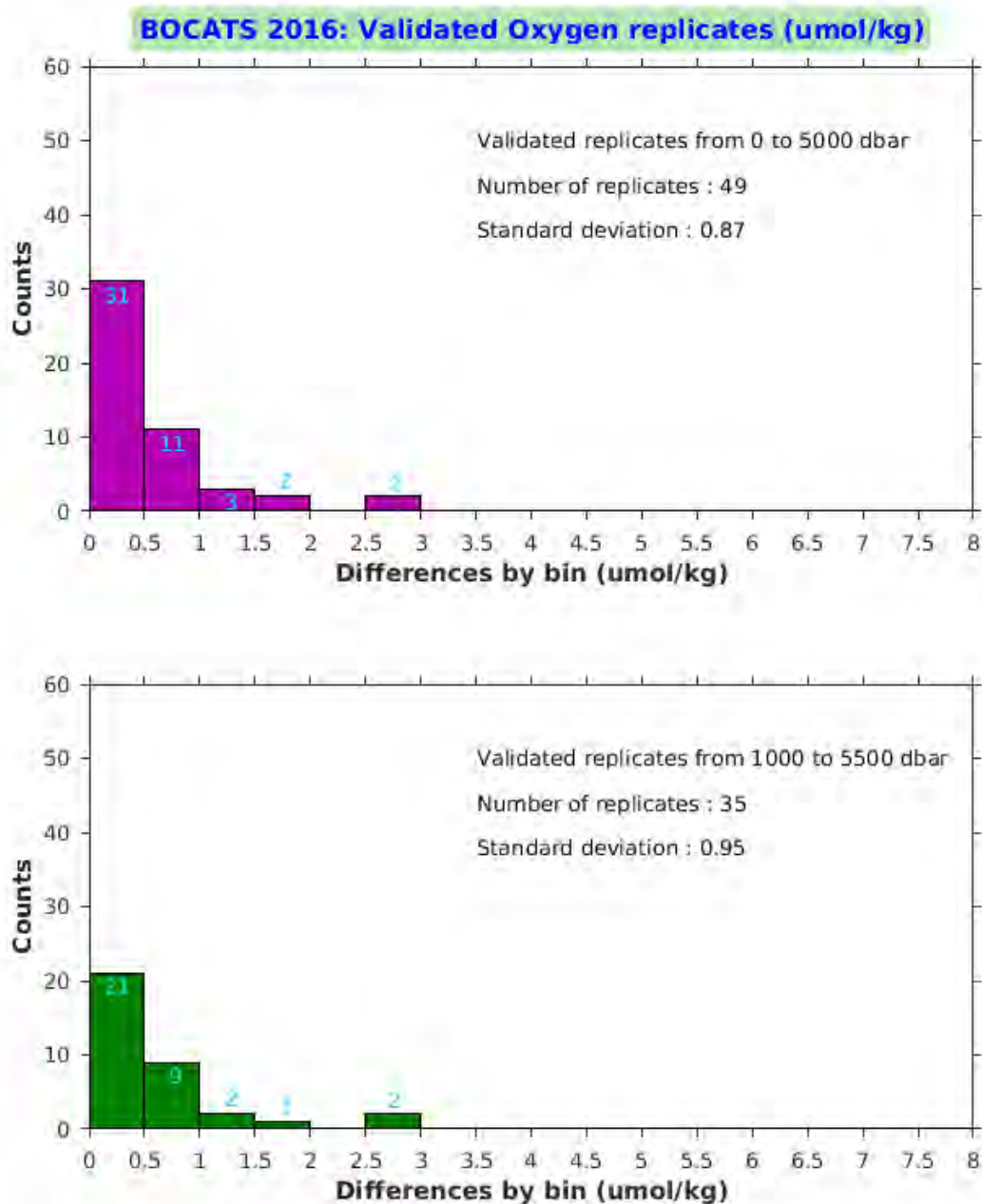


Figure 28: Histogram of the oxygen differences (umol/kg) of the replicates:

- For the 49 validated replicates of the cruise,
- For the 35 validated replicates sampled at a pressure greather than 1000 dbar.

### 3.4. Data preparation before calibration

#### 3.4.1. Data cleaning with Hydro\_net

The Hydro\_net software is used primarily to correct aberrant pressure measurements in the .cnv files. After all measurements are cleaned with respect to thresholds, then using a median deviation test. The values chosen for BOCATS are shown in the following figure. Hydro\_net is applied to the probe measurements after decoding by datcnv to create bol6st\*T1.cnv files.

**Figure 1: Chaîne Hydrologie : Mise au propre des données avant calibration**

Information générale   Nettoyage des données   Regeneration des fichiers .ros   Hysteresis   Autres

**Nettoyage**

Selection du repertoire de donnees  
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**Seuillage**

	Pression (db)	Temperature	Conductivite	Oxygene
Min.	0	-2	20	0
Max.	6000	30	70	5

**Ecart a la mediane**

	Pression	Temperature	Conductivite	Oxygene
Taille de la fenetre	20	6	10	10
Nb std	2.8	3	2.8	2.8
Ecart min	1.5	0.05	0.01	0.01
Ecart max	10	0.4	0.4	0.4
Iteration	2	2	3	3

Valider   Annuler

Figure 29: Hydro\_net options used for BOCATS.

#### 3.4.2. Correction for hysteresis

The principle of hysteresis correction on the SBE 43 sensor from Seabird is described in the application note SBE 64-3 and was coded in Matlab.

The hysteresis correction depends on three coefficients:  $H_1$ ,  $H_2$  and  $H_3$ . The default values of these coefficients are provided by Seabird. However, the coefficients  $H_1$  and  $H_3$  can be adjusted by minimizing the difference between the downcast and upcast profiles (see Edwards & al., 2010).

Using Hydro\_net, new coefficients were estimated for BOCATS:

For stations 0 to 136:

	Primary sensor	Secondary sensor
H1	-0.027	-0.026
H2	5000	5000
H3	2000	1780

The resulting files are called bo16st\*T1\_trait\_hyst.cnv.

### 3.4.3. Bottle file

After cleaning and corrected the CTD profiles, we create a new bottle file with CTD values corrected. The chemical values don't change.

### 3.4.4. Processing with Seabird routines

Seabird developed a certain number of routines in its Seasoftware V2 (SBEDDataPostprocessing) software suite in order to improve the recorded probe measurements. The sequence of programs chosen by the LOPS is the result of a study performed on the 2008 CTD cruises (see C. Kermabon, M. Arhan, "Validation et Réduction des données de la sonde 9+", June 2008). The Seabird programs are applied on the measurements output from Hydro\_net. The input files in hydro\_net are the previously created files: bo16\*.T1\_trait\_hyst.cnv.

#### *Seabird processing*

**Filter:** filters the pressure measurements.

Low pass filter B, time constant (s) = 0.15

**Alignctd:** applies a delay of 4 seconds on the primary and secondary oxygen measurements.

**Celltm:** takes into account the effect of the thermal mass of the conductivity cell using a recursive filter.

Thermal anomaly amplitude (alpha) = 0.03

Thermal anomaly time constant (1/beta) = 7

**Loopedit:** flags the cycles compared to the speed of the probe.

Minimum velocity type = fixed minimum velocity

Minimum CTD velocity (m/s) = 0

Remove surface soak selected

Exclude scans marked bad selected

**Derive:** new calculation of O2 ml/l and salinity.

At the end of the process, the corrected files are named bo16\*\_T5\_final.cnv.

### **3.5. Calibration of Pressure measurement**

The SBE9+ probe is equipped with a Paroscientific digiquartz pressure sensor, which accuracy is claimed by the manufacturer to be 0.015 % of the full scale (10000 psi), or in our case  $\pm 1.5$  psi or  $\pm 1.0$  dbar, the claimed resolution being 0.001 %, i.e. 0.1 psi or 0.07 dbar.

All the sensors were calibrated by Seabird before the cruise to have new coefficients.

The pressure sensor was also calibrated before and after the cruise at the IFREMER Laboratory of Metrology, authorized by the "Bureau National de Métrologie" (B.N.M.). The sensor is connected to a Desgranges and Huot bench-top balance, which delivers a reference pressure with a maximum error of 0.75 dbar at the 6000 dbar level.

#### **3.5.1. Calibration of the sensor under laboratory conditions at 20 °C**

Three cycles of increasing and decreasing pressure, by successive increments of 600 dbar, from 0 to 6000 dbar, are performed at laboratory temperature, i.e. 20 °C ( $\pm 1$  °C). The results obtained are shown in figure 30, in the form of mean differences between the reference pressure delivered by the bench-top balance and the equivalent pressure indicated by the sensor in the increasing pressure cycles (downcast profile of the probe) and decreasing pressure (upcast profile).

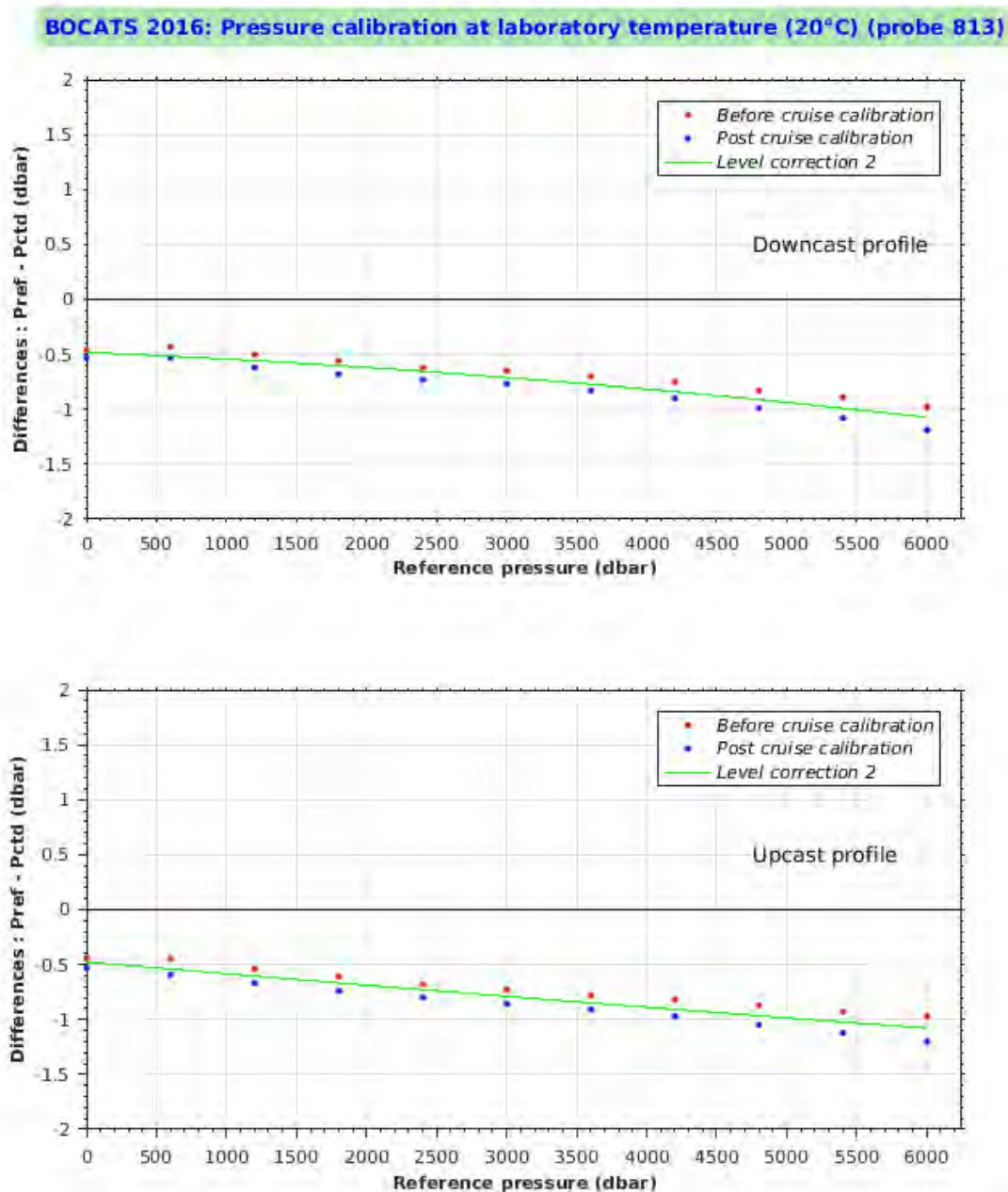
The distribution of points resulting from the pre- and post-cruise calibrations can be corrected by a polynomial of degree 2. These results highlight a good stability of the sensor: compared to the polynomial correction, the maximum difference observed (pre-and post-cruise; downcast and upcast) is 0.12 dbar at 20 °C.

#### **3.5.2. Influence of the the static temperature**

The response of the pressure sensor can be influenced by the outside temperature (figure 31). The ocean temperature shows differences above 20 °C between the surface and the bottom. The static effect of the temperature on the pressure sensor is studied in the laboratory by immersing the probe in a water bath at different temperatures. After stabilization of the bath temperature, we perform a cycle of increasing then decreasing pressure, recording the indication of the pressure sensor at separate increments of 1000 dbar. This operation is repeated at five different temperature points between -1 and 20 °C.

Considering the low impact of temperature changes on the pressure sensor and the strong temperature variations between the cruise casts, we did not apply any specific static correction for BOCATS 2016.





*Figure 30: Pressure calibration at 20 °C*

*Distribution of the mean differences, every 600 dbar, between the reference pressure and the pressure indicated by the Seabird sensor during pre-and post-cruise calibrations at laboratory temperature (20 °C):*

- a) increasing pressure cycles (downcast profile),*
- b) decreasing pressure cycles (upcast profile).*

*The curve of degree 2, that reduces the differences, is represented.*

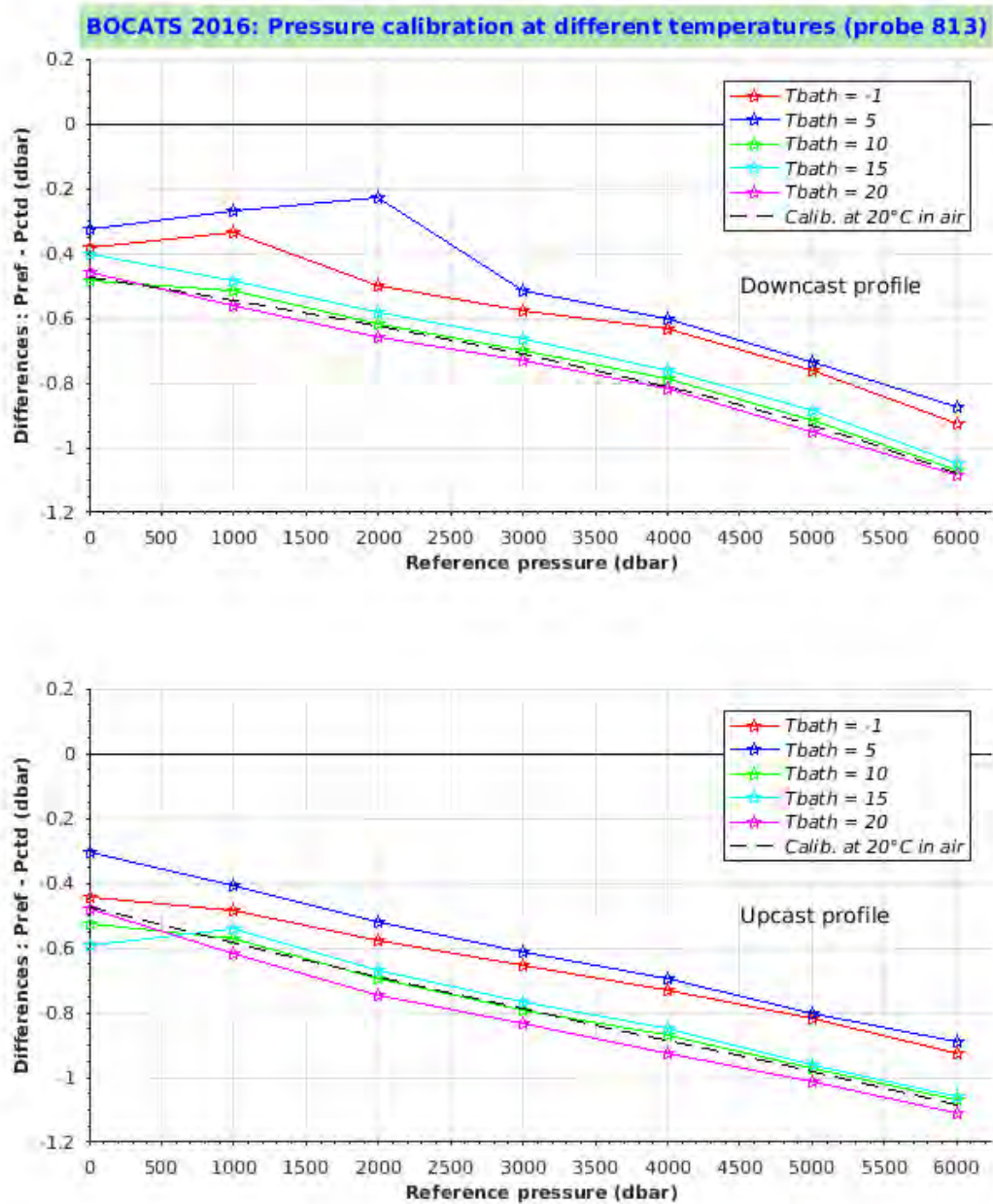


Figure 31: Response of the Paroscientific pressure sensor as a function of the temperature.

### 3.5.3. Influence of the dynamic temperature effect

The crossing of the thermocline, during the downcast and the upcast, causes an abrupt variation in temperature. This thermal shock, called the dynamic temperature effect, is simulated in the laboratory in order to study the behavior of the pressure sensor, which depends mainly on the quality of its insulation.

The sensor was submitted to a series of thermal shocks by suddenly immersing the probe, after a certain period at a given temperature, in a hotter or colder bath as appropriate. The parameters transmitted by the sensor (pressure, in situ temperature and internal temperature of the pressure sensor) were recorded during a time period sufficiently long to study the behavior of the sensor after this phenomenon (see Technical Note LPO-GT09-01, P. Branellec, M. Hamon).

These experiments allow us to conclude that the response of the Paroscientific pressure sensor is not influenced by this thermal shock. Consequently, no dynamic correction is made.

### 3.5.4. Correction of the pressure measurement on the CTD profiles

Taking into account the results of the laboratory calibrations, the pressure sensor of LOPS probe (s/n 813) is corrected by a pressure polynomial of degree 2 (fig. 30).

Finally, we can consider that the uncertainty in the pressure measurement is of the order of the sensor accuracy: 1 dbar.

### 3.5.5. Validation of the CTD pressure measurement

#### *Monitoring of the pressure sensor during the cruise*

On the CTD, we had only one pressure sensor, so we followed the response of the CTD pressure sensor, during the cruise, by different ways. First we noted the value of the sensor in the air before each station (see fig. 32), at the beginning of the downcast and at the end of the upcast, secondly the frame is equipped with reversing pressure meter sensor (accuracy: 0.1 % of full scale) and we compared the value of the CTD sensor and SIS sensor at the bottom (see fig. 33) to detect an eventual drift (NB: from station 0 to 70, the reversal of the SIS sensors was hampered by a strap, this is why the plot was noisy). The SIS the pressure meters are not calibrated, so we followed relative relation for detecting a possible drift.

#### *Monitoring of the pressure sensor over the time*

Before and after each cruise, our pressure sensor, on the both CTD, was calibrated at Ifremer (ref 3.5.1). The figure 34 shows the results of all calibrations since we acquired the CTD.

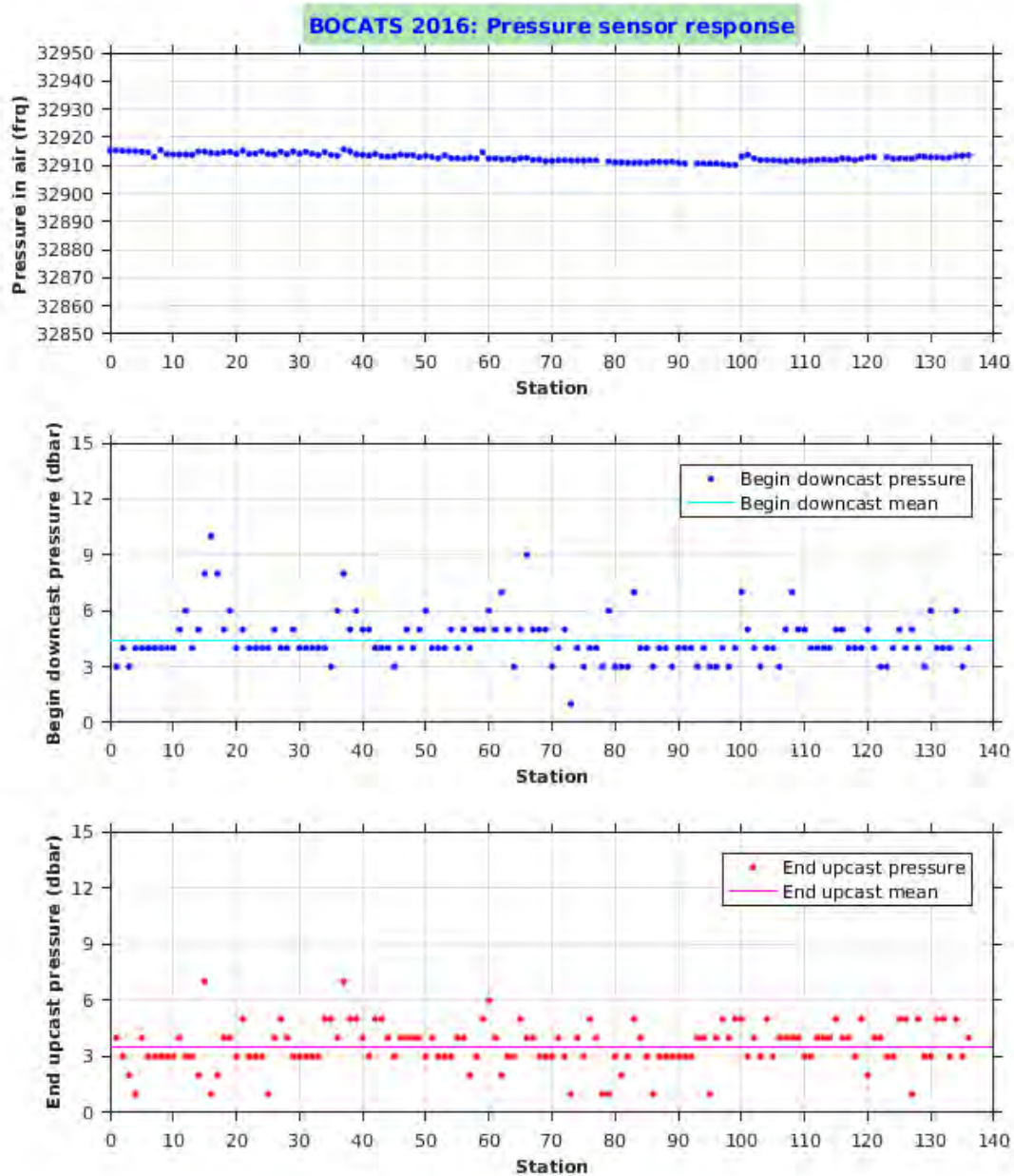


Figure 32: Monitoring of the pressure sensor readings:  
 a) in air at the start of the cast (value in Hertz),  
 b) at the start of the downcast,  
 c) at the end of the downcast.  
 Means values are shown as solid lines.



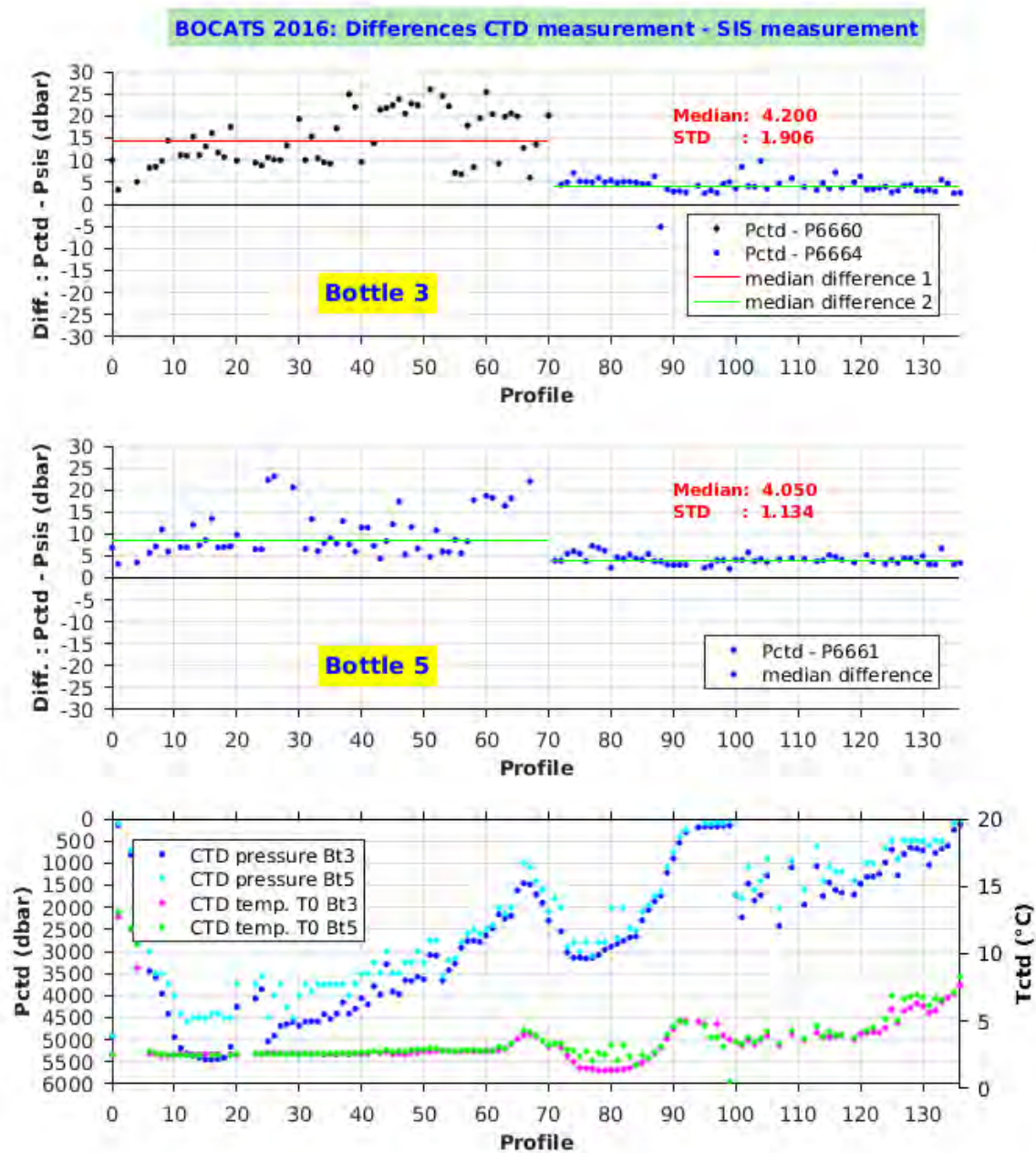


Figure 33: Comparison CTD pressure and SIS pressure.



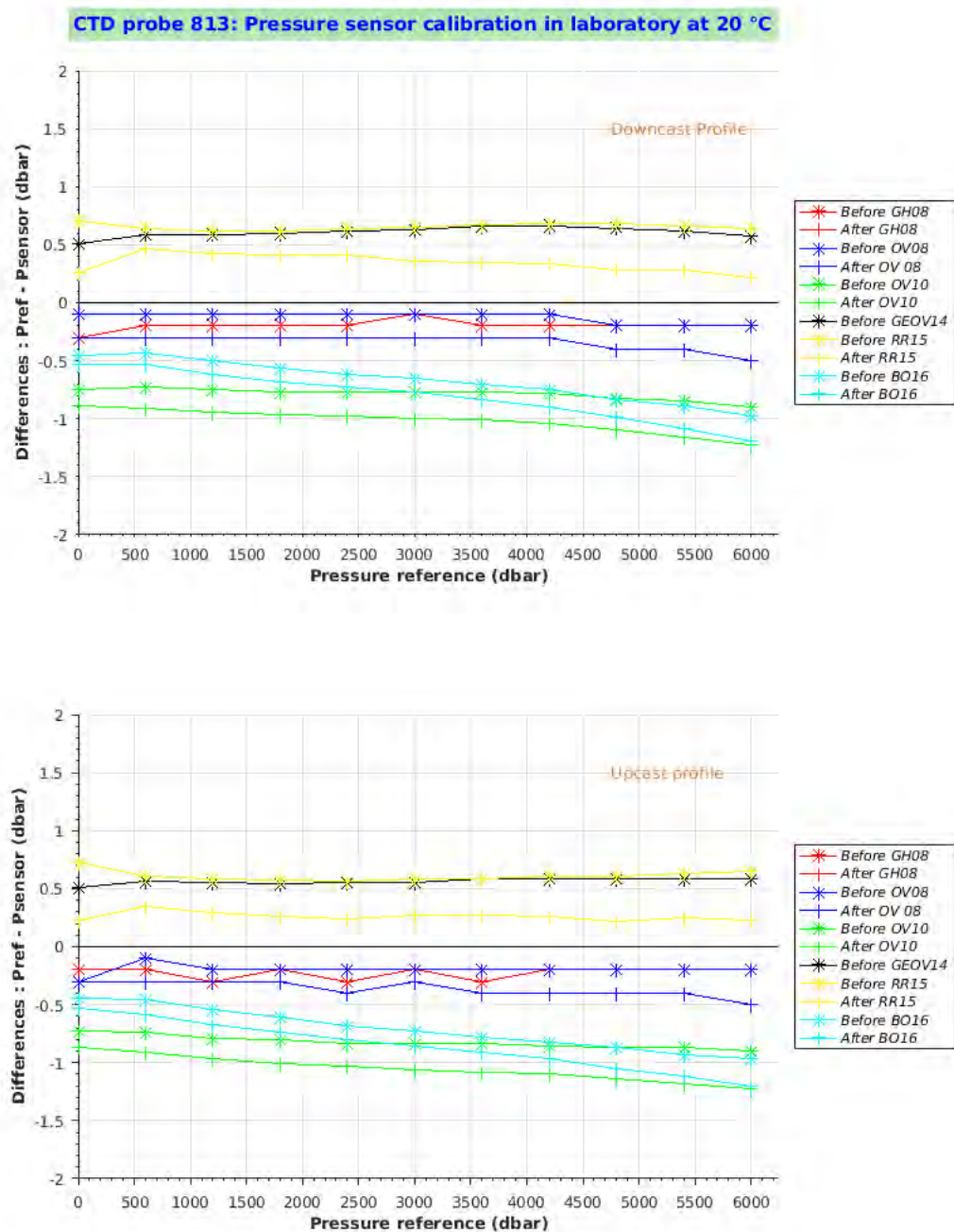


Figure 34: Monitoring of the pressure sensor over time.

### 3.6. Calibration of the Temperature measurement

Our SBE9+ probes are equipped with two sets of temperature (T) and conductivity (C) sensors. The temperature sensors are SBE3+ sensors from Seabird, the measurement resolution is 0.0003 °C and the accuracy claimed by the manufacturer is 0.001 °C.

The both SBE3 on each CTD was calibrated by Seabird before each cruise. We started the cruise with new coefficients.

We also calibrated the temperature sensors at Ifremer laboratory of metrology before and after the cruise.

#### 3.6.1. Calibration of the sensors at Ifremer laboratory

The LOPS's probes are regularly calibrated in the IFREMER laboratory of metrology, before and after each cruise. The probe is fully immersed in a thermostat seawater bath which temperature stability is strictly controlled. The reference temperature of the bath is provided by a Rosemount-type platinum resistance, placed in close proximity to the CTD sensor. This thermometer is periodically checked and certified by the "*Laboratoire National de Métrologie et d'Essais*" (LNE). The measured temperature is expressed on the EIT 90 scale. Several measurement points are thus tested by recording the temperature indicated by the CTD and comparing it to the reference temperature of the bath at several points between -1 and 25 °C.

The figure 35 shows the calibration before (may 2016) and after cruise (sept. 2016). We note that the differences are significant. The sensors SBE3 s/n 2911 and s/n 4594 were returned to Seabird, on February 2017, for a new calibration before the next cruise. The sensors were out of specifications and were inspected to pass the new calibration.

Finally, the temperature measurements obtained on the cruise profiles are corrected by applying a polynomial of degree 1. This curve minimizes the differences (reference temperature - probe temperature) obtained during the calibration performed before the cruise: the maximum error on the primary sensor is  $\pm 0.0028$  °C and the standard deviation is 0.0019 °C.

#### 3.6.2. Calibration of the CTD measurement

The reduced files only conserve a single dataset by sensor (T, C, O<sub>2</sub>). The choice between the primary and secondary dataset is made by visualizing histogram of all raw measurements of the probe at 24 Hz. In the case of the BOCATS cruise, the choice was made to use the primary temperature (T<sub>0</sub>) for the complete calibration phase.

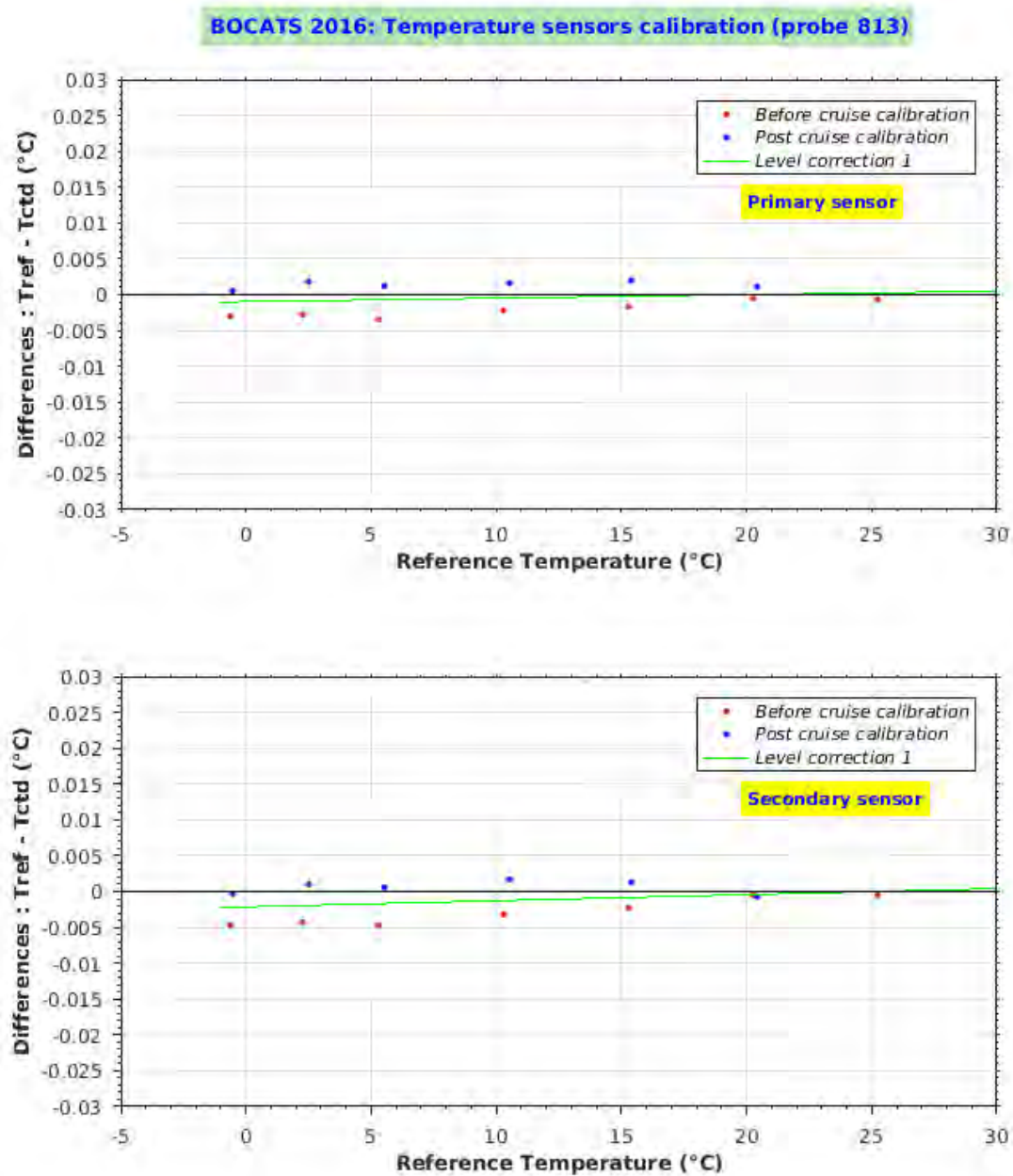


Figure 35: Final Temperature calibration.

### 3.6.3. Monitoring of the Temperature measurement

The LOPS CTD frame is equipped with two reversing thermometers (SIS RTM 4002X) on bottle 3 ( $T_{1726}$ ) and bottle 5 ( $T_{1750}$ ). The bottle 3 is always closed at the bottom. The SIS thermometers are not calibrated, so we followed relative relation for detecting a possible drift.

During the cruise we compared the indications of the SIS thermometers with the SBE9 temperature sensor.

The figure 36 shows this comparison.

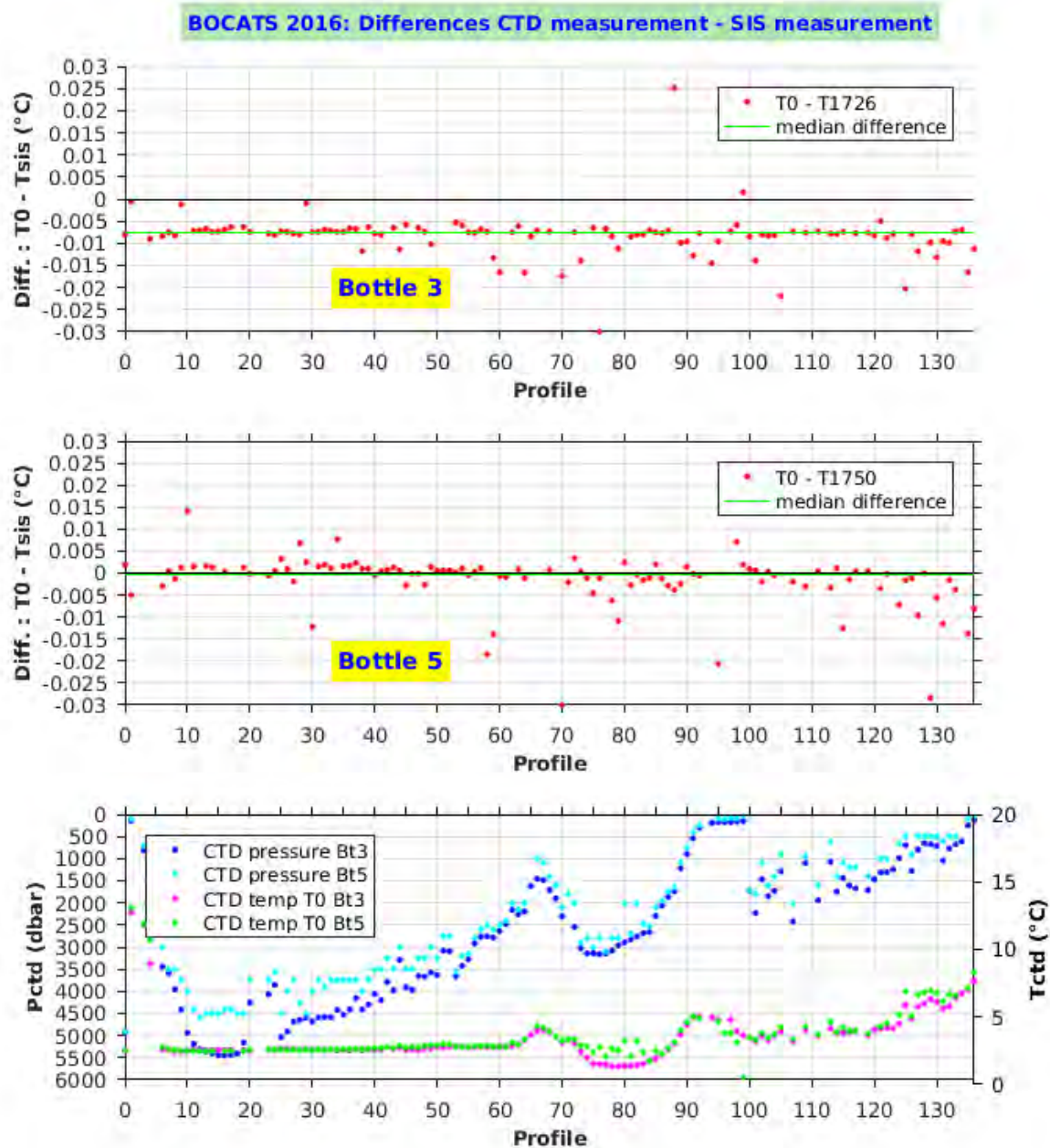


Figure 36: Temperature comparison.



Before and after each cruise our CTD is calibrated at Ifremer. The plot (fig. 37) shows the monitoring over time for the probe s/n 813.

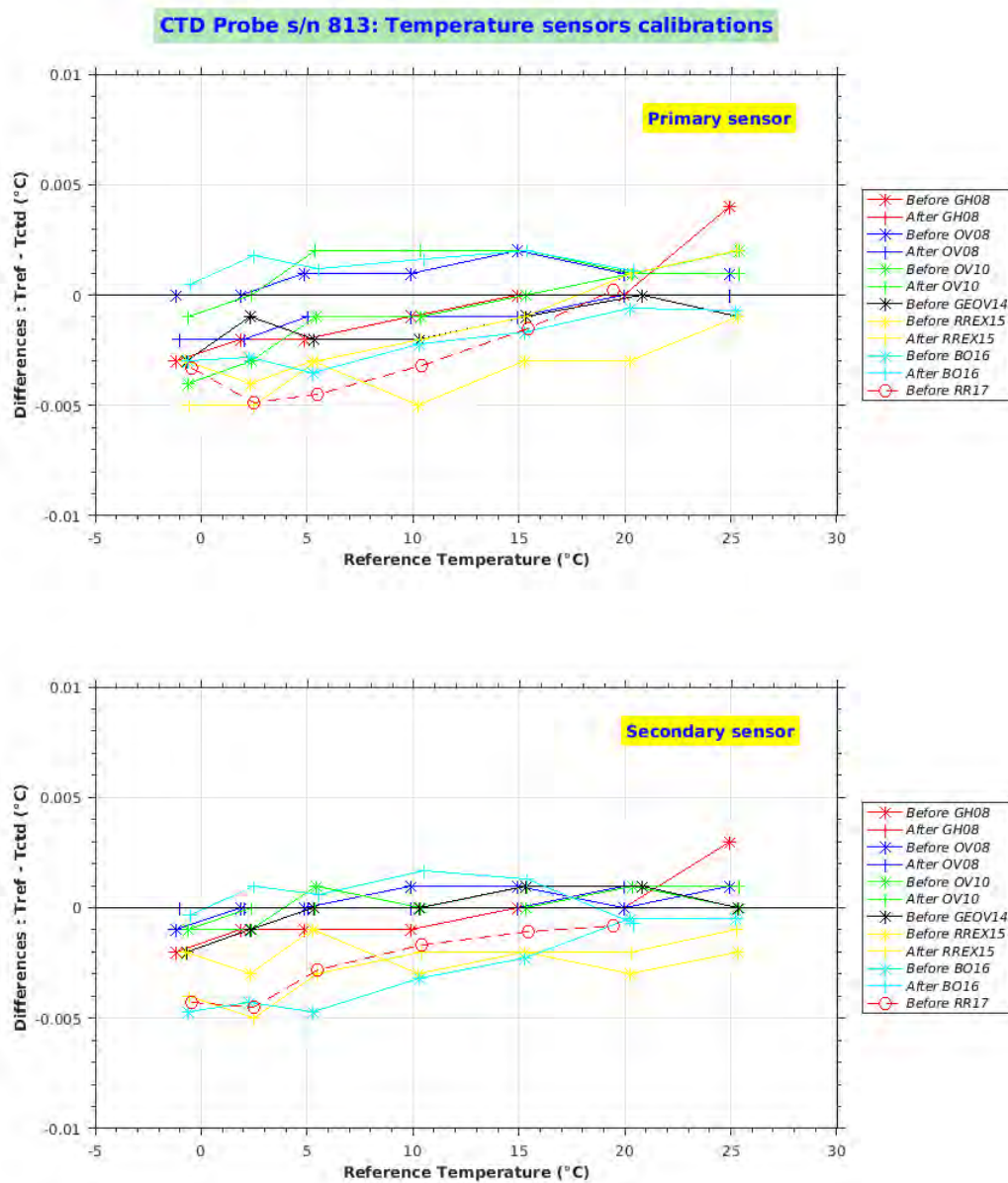


Figure 37: Monitoring of temperature sensors of SBE 9 s/n 813.



### 3.7. Calibration of the Conductivity

The SBE9+ probe is equipped with two SBE4 conductivity sensors ( $C_0$ ,  $C_1$ ), with a range of measurements from 0 to 70 mS/cm. The accuracy claimed by the manufacturer is 0.003 mS/cm and the resolution 0.0004 mS/cm. The serial numbers of the sensors, used during the cruise, are given in section 3.1.1 Technical summary.

The reduced files only conserve a single conductivity. The choice between the primary ( $C_0$ ) and secondary ( $C_1$ ) conductivity is made before, by visualizing histogram of the raw measurements of the probe at 24 Hz. In the case of the BOCATS cruise, the choice was made to use the primary conductivity ( $C_0$ ).

#### 3.7.1. Operating mode

The new calibration procedure for the conductivity measurements ( $CO_s$ ), written according to the recommendations of the GO-SHIP group (2010), first involves the conversion of the chemical salinity to chemical conductivity ( $CO_H$ ) using the corrected values of the pressure and temperature sensors, at the sampling level.

Then, the different corrections to be applied are calculated to minimize the differences:

$$\Delta C = CO_H - CO_s$$

- Correction as a function of time to take into account a potential slow drift of the conductivity sensor.
- Correction as a function of the conductivity. The selected coefficients result from successive iterations on the considered group of samples. The process is stopped when no additional sample is removed at the end of the current iteration. It follows that, at the end of the last iteration, all the differences  $\Delta C$  are lower than the value:  

$$\Delta C_{\max} = 2.8 * \text{standard-deviation}$$
for the samples used in the calculation process.
- Correction as a function of the pressure on the conductivity or the salinity.

#### 3.7.2. Analysis of the initial results and strategy adopted

During the cruise, we stopped the salinity sampling after station 130.

The figure 38 shows the conductivity differences between conductivity bottle and raw conductivity sensor without any correction or offset.

The figure 39 shows the results of the adjustment of the conductivity sensor for all the casts together. All the dots are plotted (blue dots kept, red dots rejected).

Taking into account the imbalance between the number of points on the surface (1926) and at the bottom (576), a weight 2 is applied to the points above 2000 dbar. The station 0 wasn't kept for calibration.

The final calibration is station 1 to station 136, weight 2 for pressure > 2000 dbar and correction of the pressure effect with a pressure polynomial of degree 1.

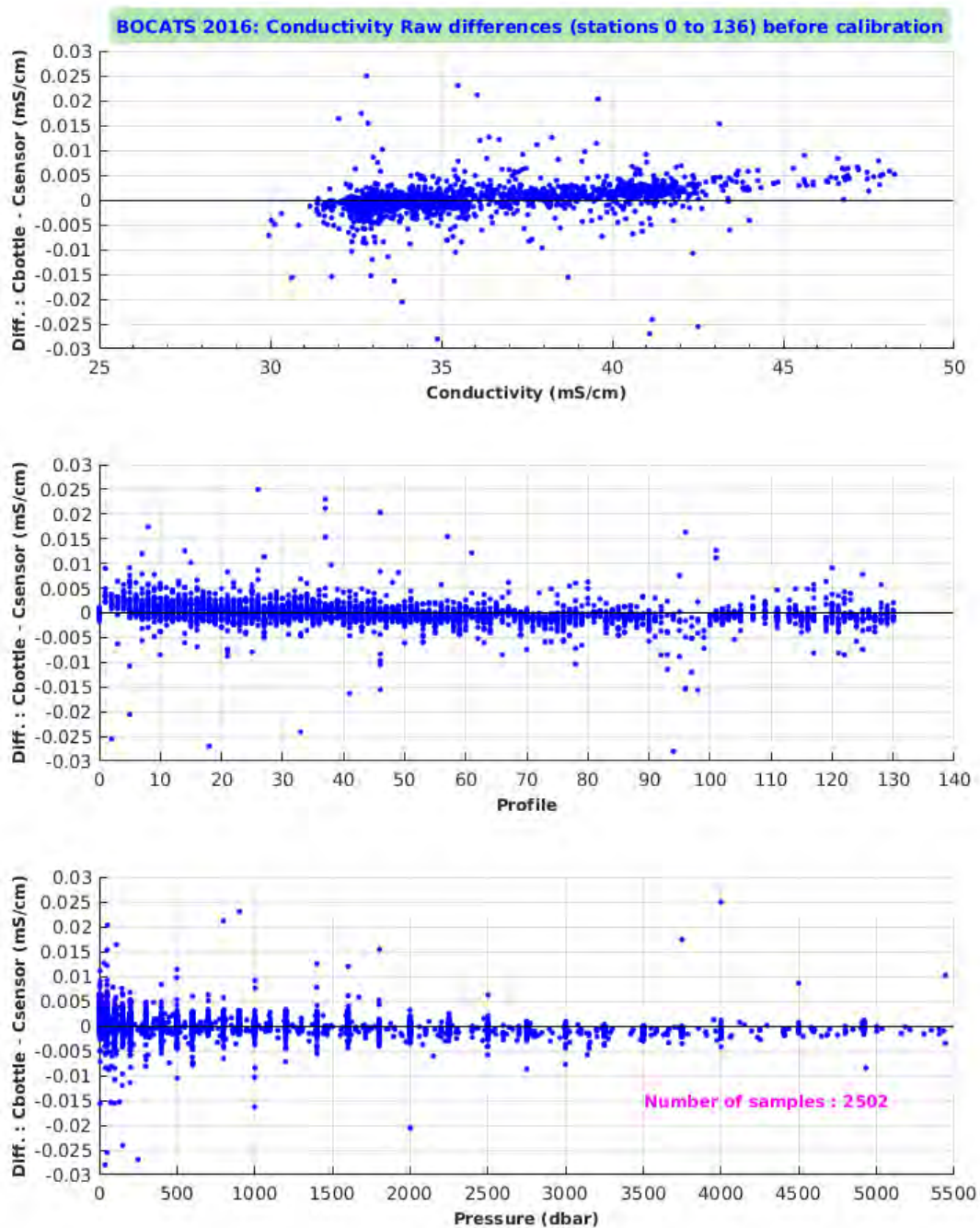


Figure 38: Conductivity raw differences

Bottle salinity is converted to bottle conductivity. The differences are the result of raw bottle conductivity minus raw sensor conductivity.

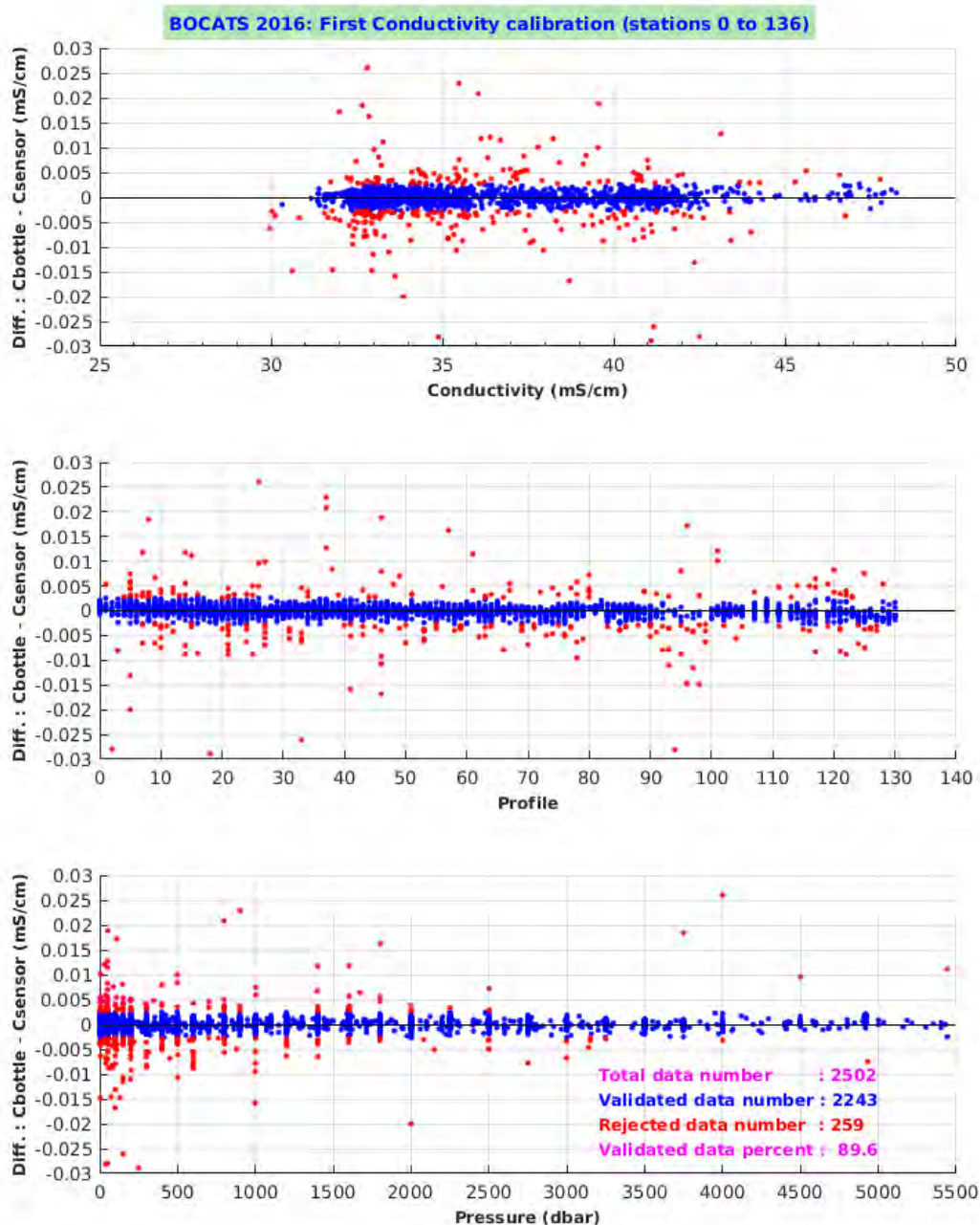


Figure 39: First conductivity calibration

Differences between the conductivity of the samples and the corrected probe conductivity at each sampling level:

- as a function of the conductivity,
- as a function of the profile number,
- as a function of the pressure of the sampling level.

These differences are the result of a conductivity calibration on all the cruise samples, without grouping casts, with a pressure correction. The blue dots are kept by the calculation, the red dots are rejected.

### 3.7.3. Assessment of the calibration of the conductivity profiles

The table below shows the results of the calibration of the conductivity measurements for the BOCATS 2016 cruise:

Profile or group of profiles	Weight P > 2000 dbar	Corr. P effect degree	Number of samples considered	Number of samples conserved in the calculation	Standard deviation		
					0 à 5500	0 à 1000	1000 à 5500
1 - 136	2	1	3047	2739 (89.9 %)	0.00090	0.00101	0.00085

The table shows, for all the casts, the number of samples used for the calculation, the number of samples conserved by the process, as well as the resulting standard deviation for the group considered.

During the cruise, 2502 salinity samples were measured (2474 for stations 1 to 136). We applied a weight 2 for samples > 2000 dbar, so the corrected number of samples was 3047 and the calculation process validated 2739 of them, i.e. 89.9 %.

Figure 40 shows the remaining differences in conductivity after final conductivity calibration of all profiles.

The histograms in figure 41 confirm that the distribution of the differences is satisfactory. In 75.3 % of cases, the differences in conductivity are lower than  $\pm 0.001$  mS/cm, while in 100.0 %, they are less than  $\pm 0.003$  mS/cm, the standard deviation in conductivity is 0.0009 mS/cm.

The overall assessment can be established as follows: the conductivity values of 2739 validated samples indicate a standard deviation between the sensor data and the chemistry data, for the whole cruise, of 0.0010 mS/cm.

The histograms of differences in salinity after optimization are shown in figure 42, the standard deviation in salinity is 0.0010.



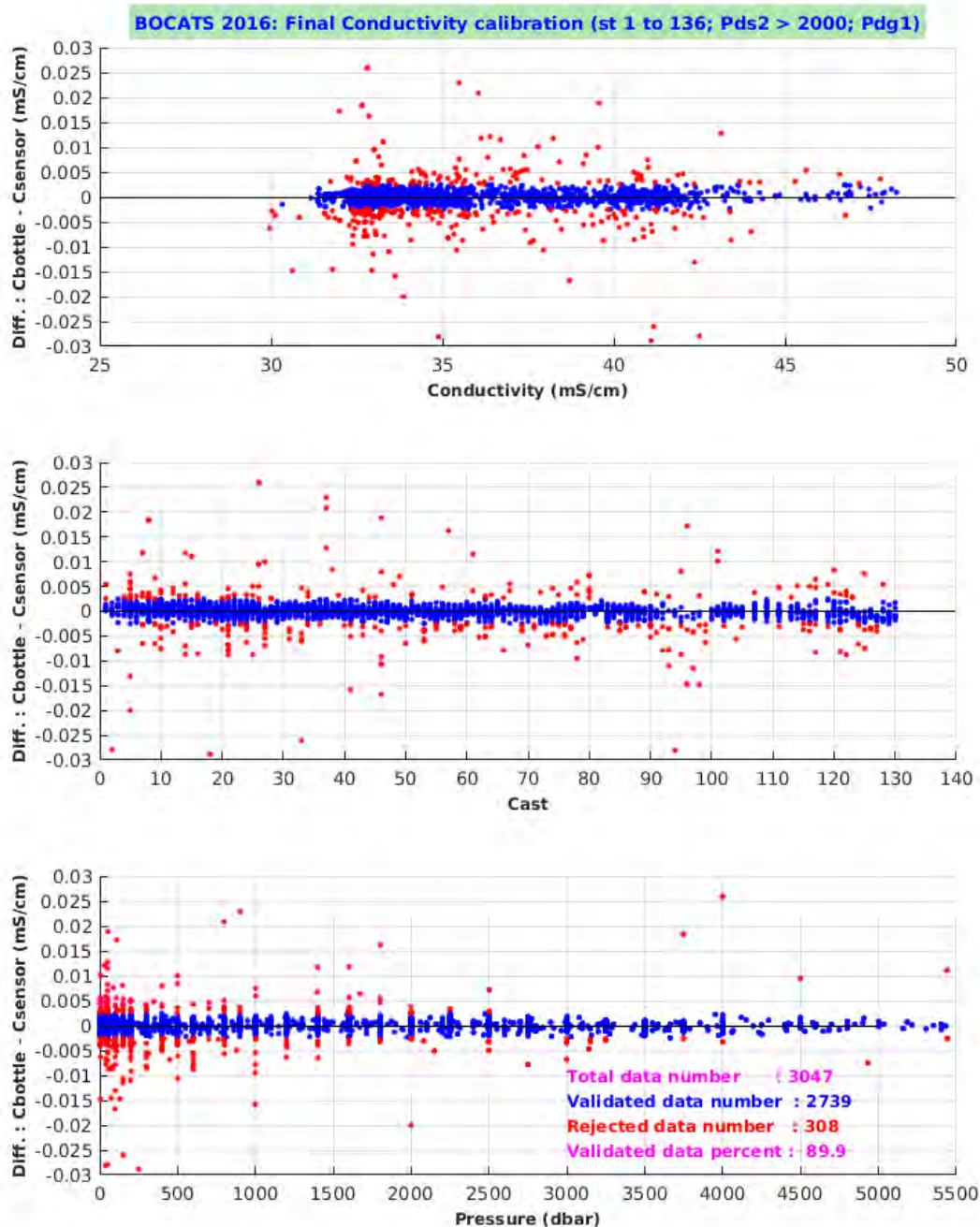


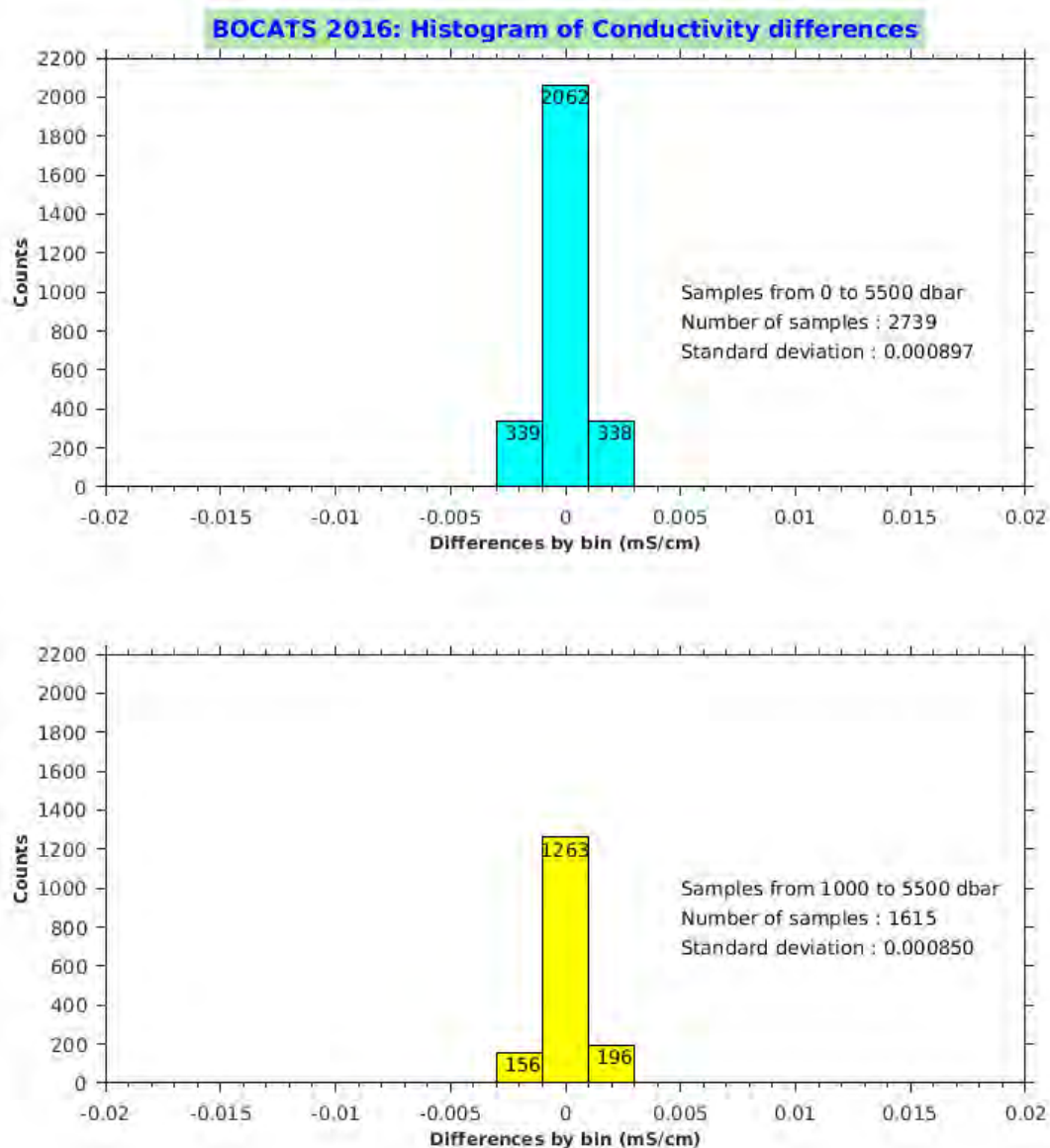
Figure 40: Final conductivity calibration for BOCATS

Differences between the conductivity of 3047 validated samples and the probe conductivity corrected at each sampling level:

- a) as a function of the conductivity,
- b) as a function of the profile number,
- c) as a function of the pressure at the sampling level.

These differences are the result of a conductivity calibration on all the cruise samples without grouping casts, with pressure correction.





*Figure 41: Histograms of final Conductivity calibration*

*Histograms of the differences between the conductivity of the validated samples and the CTD conductivity at the sampling level:*

- a) for all the 2739 validated cruise samples,*
- b) for the 1615 validated samples collected at a pressure greater than 1000 dbar.*

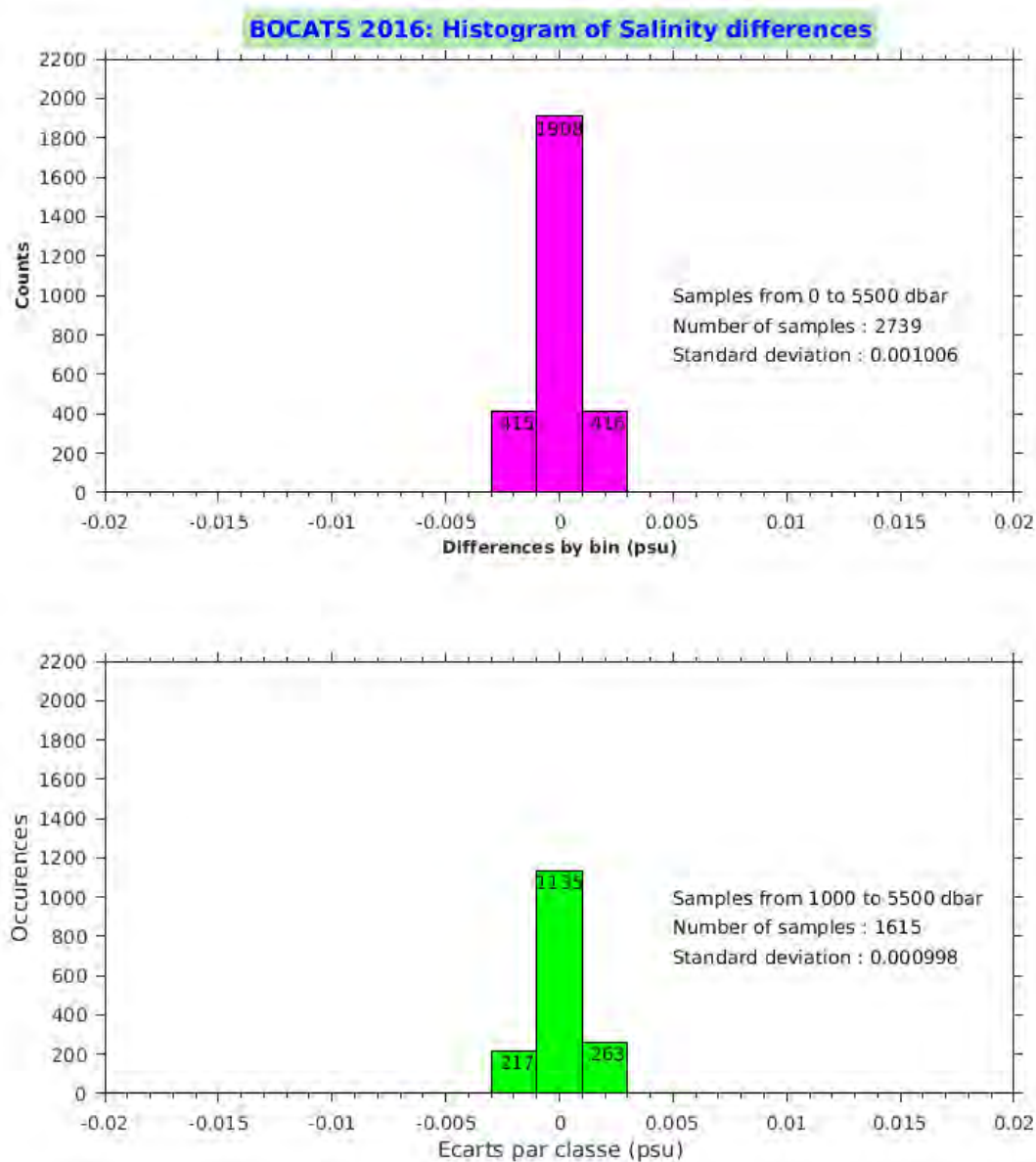


Figure 42: Histograms of final Salinity calibration.

### 3.7.4. Validation of the results

Figure 43 compares Theta-S from different cruises (OVIDE 2010, CATARINA 2012, RREX 2015, BOCATS 2016) made in the same area (D-E-F section on the map).

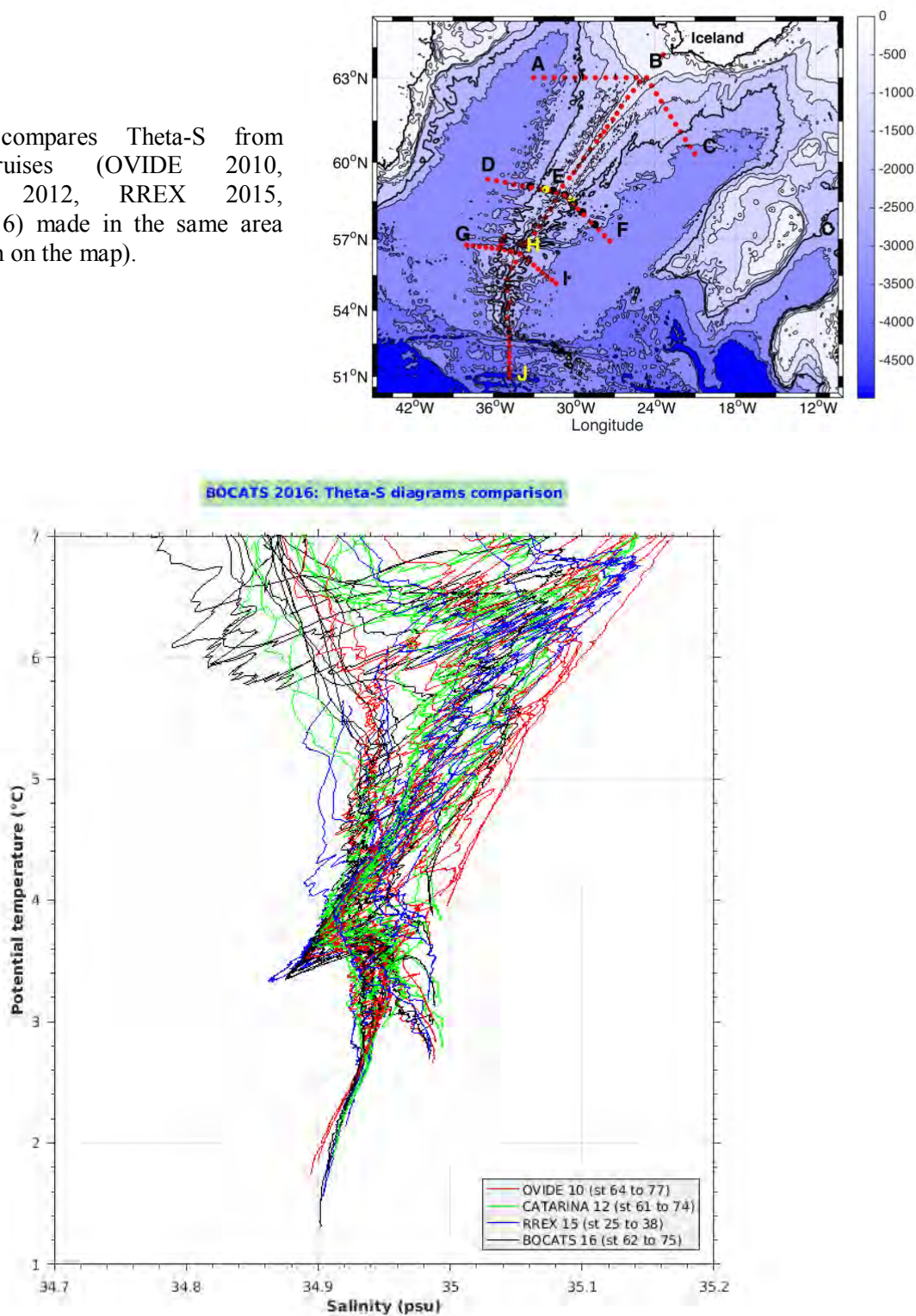


Figure 43: Theta-S comparison.

We also compare bottom theta-S for the stations carried out in the Iberic basin at the same positions during the cruises (OVIDE 2010, CATARINA 2012, BOCATS 2016).

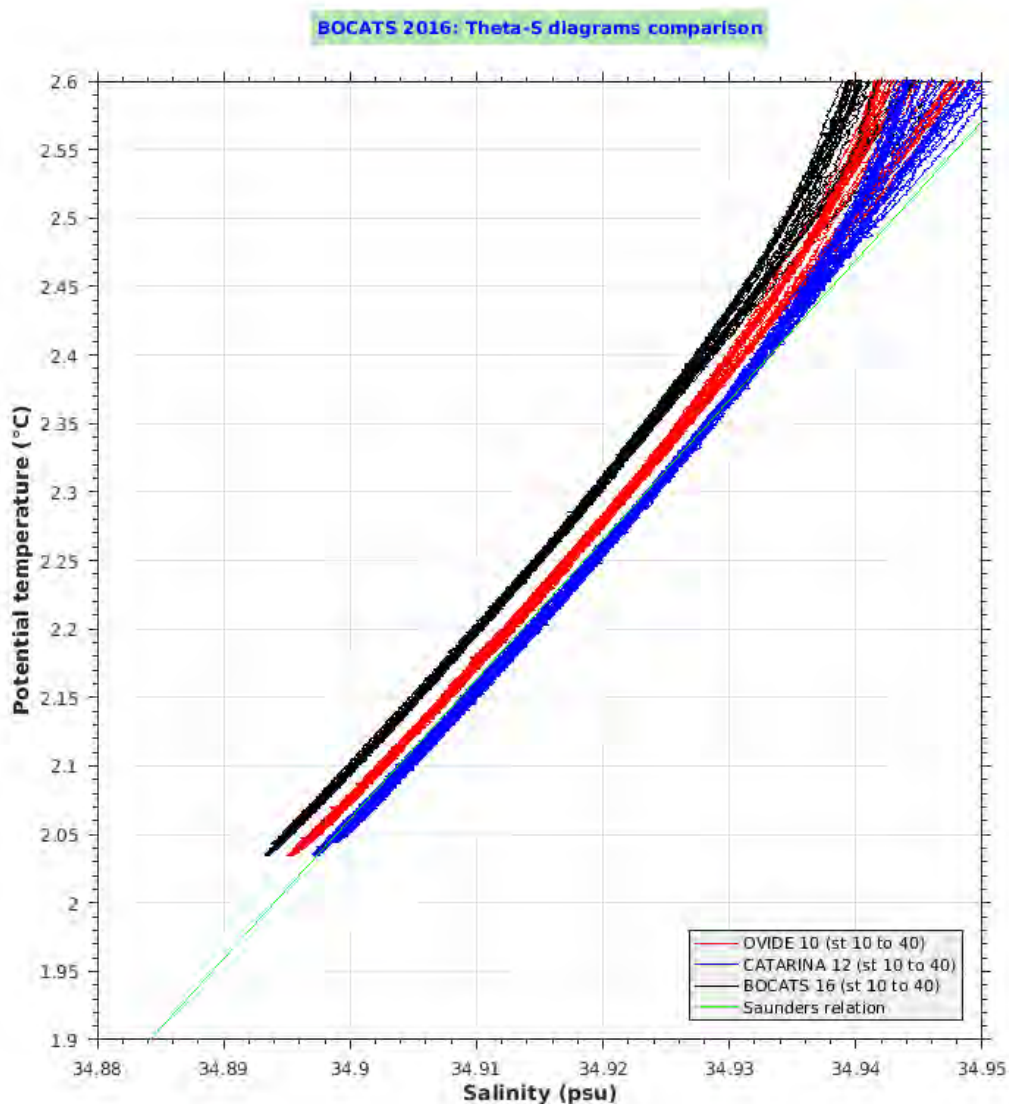
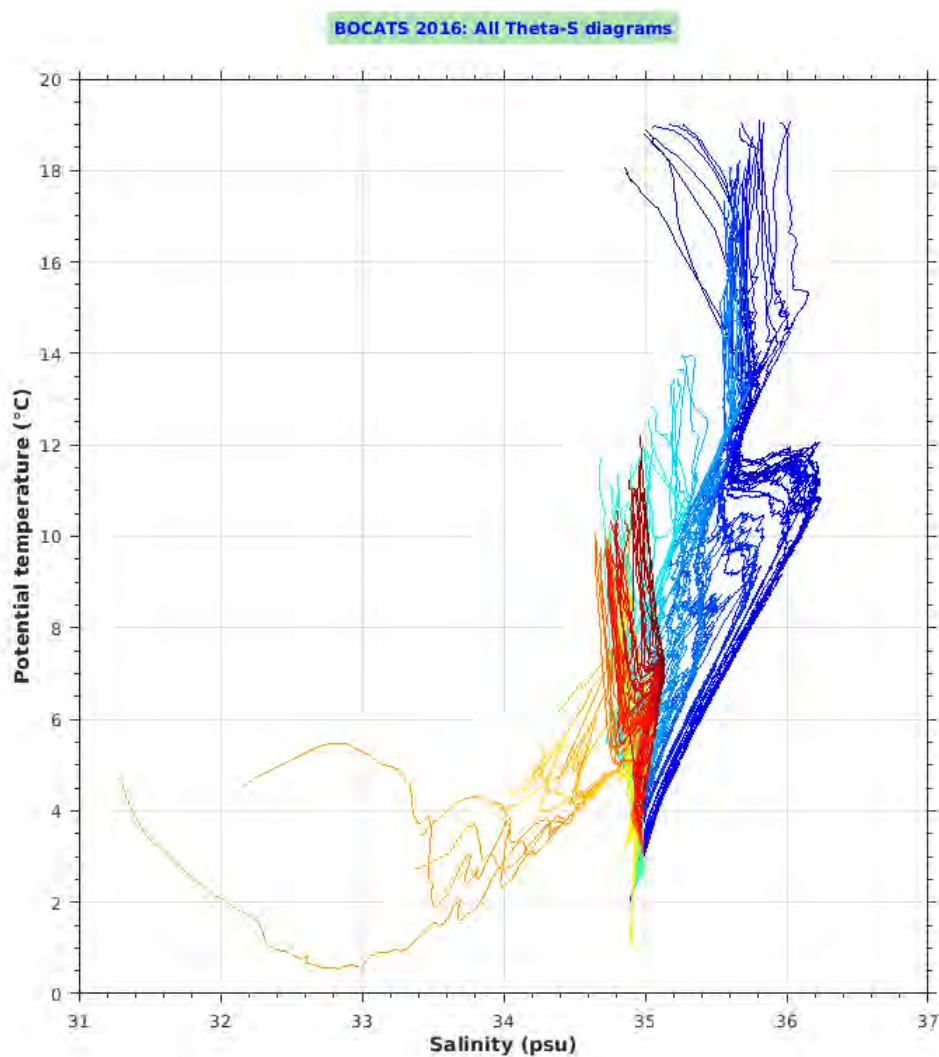


Figure 44: Theta-S comparison.

The figure 45 shows all the Theta-S of BOCATS cruise. The color of the profiles changes gradually from blue to red, from profile 1 to 136.



*Figure 45: All Theta-S for BOCATS cruise.*



### 3.8. Calibration of dissolved oxygen profiles

The SBE9+ probe is equipped with two SBE43 dissolved oxygen sensors with a range of measurements from 0 to 120 % of the surface saturation. The accuracy claimed by the manufacturer is 2 % of the saturation. The serial numbers of the sensors, used during the cruise, are given in the section 3.1.1 Technical summary.

The choice between the primary (Ox<sub>0</sub>) and secondary (Ox<sub>1</sub>) oxygen is made before calibration by visualizing (histogram) the raw measurements of the probe at 24 Hz. The reduced files only conserve a single oxygen measurement. In the case of the RREX 2015 cruise, the choice was made to use the primary oxygen (Ox<sub>0</sub>).

#### 3.8.1. Operating mode

The dissolved oxygen content, OXYSBE, expressed in ml/l, is calculated from the Vr information transmitted by the sensor using the formula proposed by Millard (1982).

$$\text{OXYSBE (ml/l)} = \text{soc} * (\text{Vr} + \text{Voffset} + \text{tau} (T, P) * \delta V / \delta t) * \text{oxsol} (T, S) \\ * (1.0 + A * T + B * T^2 + C * T^3) * e^{(E * P / K)}$$

Vr: O<sub>2</sub> measurement in volts  
 $\delta V / \delta t$ : derivative of the signal SBE43 (volt/sec)  
 Oxsol: function for the calculation of the oxygen solubility (Garcia & Gordon 1992)  
 P: probe pressure (dbar)  
 T: probe temperature (°C)  
 K: probe temperature (°K)  
 S: probe salinity (psu)  
 Soc, Voffset, A, B, C, E, tau: characteristics of the Seabird sensor

In practice, the term associated with tau is neglected because it adds noise when the profile is homogenous vertically (see Application note n° 64; Nov 2008). The goal of the calibration is the determination of a new Soc and Voffset.

The oxygen in volts is corrected for hysteresis by the Hydro\_net program in .cnv files (section 3.4.2).

For the calibration, the probe oxygen (OXYS) is obtained by calculating a mean on a water column of 15 dbar on the downcast profile, at the sampling level, based on the probe measurements in volts before the hysteresis correction. So we don't use the bottle files provided by SeaBird processing software for this calibration.

The method used for the calibration of the probe measurements from the chemistry measurements (OXYC in ml/l) involves the determination of the coefficients M and B of the equation below to minimize the differences between (OXYC / phi) and (OXYS \* M + B).

$$\text{OXYC (ml/l)} / \text{phi} = \text{OXYS (volt)} * M + B$$

where:

$$\begin{aligned} \cdot \text{phi} &= \text{Oxsol}(T,S) * (1.0 + A*T + B*T^2 * C*T^3) * e^{(E*P/K)} \\ \cdot M &= \text{soc} \\ \cdot B &= \text{Voffset} * \text{soc} \quad \text{thus} \quad \text{Voffset} = B / \text{soc} \end{aligned}$$

The Soc and Voffset coefficients (deduced from the values of M and B) of the Seabird sensor characteristics are determined for a set of samples, using successive iterations based on a principle similar to that for the conductivity.

### 3.8.2. Dissolved oxygen units

The unit used in the calibration procedure and in graphical representations of this report is the milliliter per liter (ml/l).

The water temperature, at the time of sampling from the bottles, was taken with an Ebro thermometer (accuracy =  $\pm 0.3$  °C) before fixing of the oxygen by the reagents. We then deduce the density of the seawater sample, and the dissolved oxygen content can be converted to micromoles per kilogram ( $\mu\text{mol/kg}$ ) (see Mercier et al. 1992).

The dissolved oxygen data of the SBE43 sensor are therefore provided in both units.

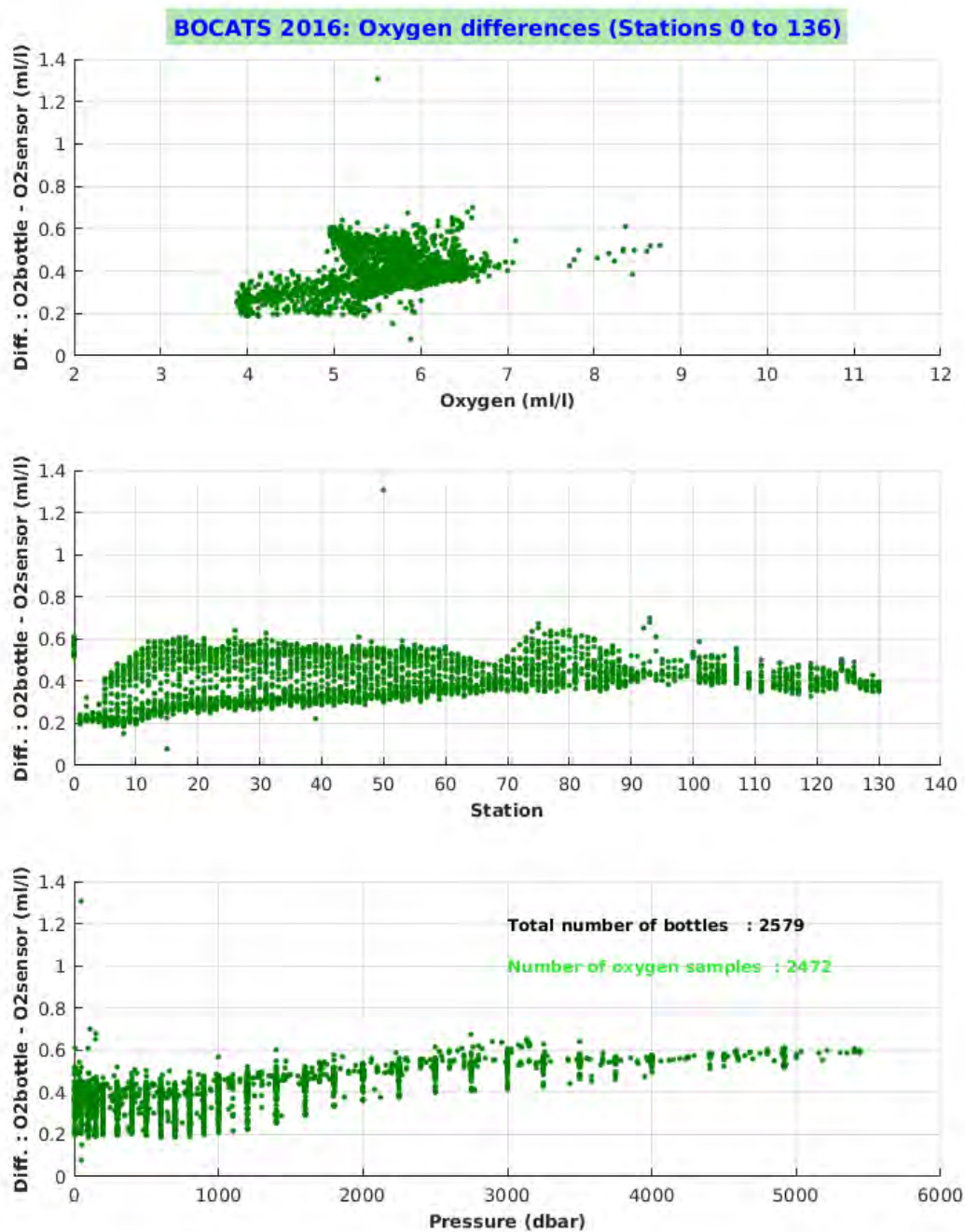
### 3.8.3. Analysis of the initial results and strategy adopted

The figure 46 shows the oxygen raw differences between oxygen bottle and raw oxygen sensor taken on downcast. The oxygen sensor was first corrected with hydro\_net (see sections 3.4.1 and 3.4.2).

Figure 47 shows the distribution of the differences obtained after this initial global determination of Soc and Voffset coefficients.

A detailed analysis shows that dividing the casts into groups would improve the distribution of differences. Also, a correction of the pressure effect with a polynomial of degree 1 or 2 improves the results.

Taking into account the imbalance between the number of points on the surface (1896) and at the bottom (576), a weight 2 is applied to the points above 2000 dbar. Thus, each of these phases should be considered separately. Their identification and then a specific calculation is used to obtain, for each cast, a dissolved oxygen profile that fits well on the oxygen values obtained by chemical analysis. As for salinity calibration, station 0 wasn't kept.



*Figure 46: Oxygen raw differences*  
*Oxygen raw differences ( $O_2$  bottle -  $O_2$  sensor) without calibration.*

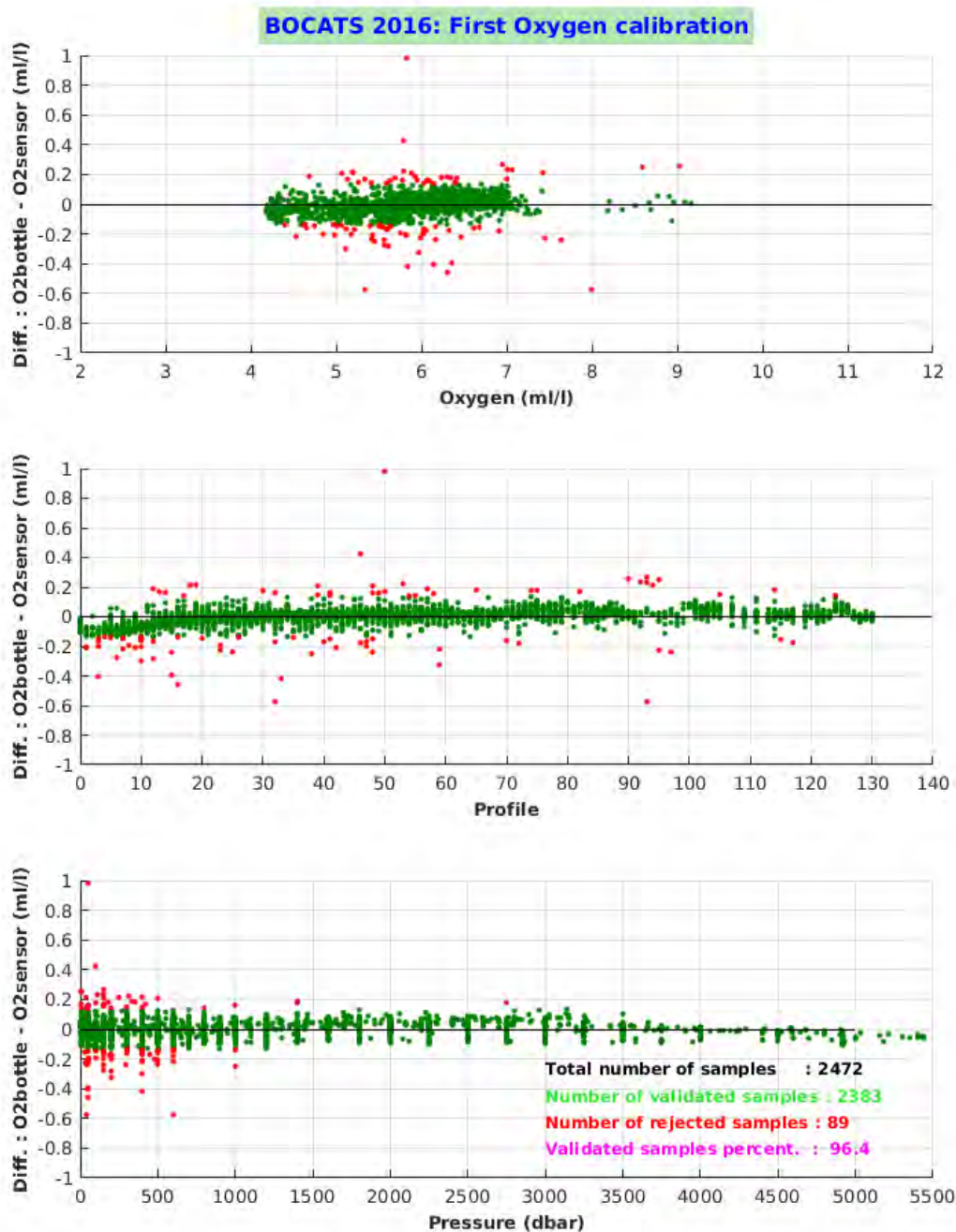


Figure 47: First Oxygen calibration

Differences between the oxygen values measured in the samples and that of the CTD downcast profile at the sampling pressure:

- as a function of the oxygen,
- as a function of the number of the profile concerned,
- as a function of the pressure at the sampling level.

These differences are the result of a calculation performed on all the cruise samples without grouping stations and without pressure correction.

### 3.8.4. Assessment of the calibration of the dissolved oxygen profiles

The table below shows for all casts, the number of oxygen samples considered, the number of validated samples and the standard deviation in three pressure intervals, as well as the calculated parameters of the sensor Soc and Voffset.

#### Assessment of the calibration of the dissolved oxygen profiles of the BOCATS 2016 cruise:

Profile or group of profiles	Weight P > 2000 dbar	Corr. P effect degree	Number of samples considered	Number of samples conserved in the calculation	Standard deviation			Coefficients	
					0 à 5500	0 à 1000	1000 à 5500	Soc	Voffset
1 - 12	2	1	329	301 (91.5%)	0.0282	0.0335	0.0232	0.420343	-0.394875
13- 16	2	2	154	139 (90.3 %)	0.0257	0.0312	0.0235	0.426162	-0.403319
17 - 20	2	2	151	143 (94.7 %)	0.0293	0.0381	0.0252	0.427814	-0.401635
21 - 54	2	2	1207	1097 (90.9 %)	0.0238	0.0351	0.0172	0.428048	-0.397953
55 - 136	2	1	1180	1119 (94.8 %)	0.0270	0.0307	0.0205	0.425251	-0.378593
1 - 136			3021	2799 (92.7 %)	0.0269		0.0209		

Figure 48 shows the final differences after calibration. The distribution of these differences is correctly centered and acceptable for each of the cruise profiles. The distribution of the differences presented as a function of the pressure shows that it is also acceptable for all sampling levels.

The histograms in figure 49 allow us to visualize the distribution of differences in a different way and to verify that their distribution is properly centered.

For the complete BOCATS 2016 cruise, 2472 oxygen samples were analyzed (2444 for stations 1 to 136). We applied a weight 2 for samples > 2000 dbar, so the corrected number of samples was 3021 and the calculation process validated 2799 of them, i.e. 92.7 %.

The differences in oxygen are less than  $\pm 0.010$  ml/l in 34.5 % of cases and less than  $\pm 0.030$  ml/l for 77.3 %, giving a standard deviation of 0.027 ml/l.

Considering only the part of the oxygen profile greater than 1000 dbar, i.e. 1665 samples, the differences are less than  $\pm 0.010$  ml/l for 42.3 % and less than  $\pm 0.030$  ml/l for 87.8 %. The resulting standard deviation is 0.021 ml/l.

Figure 50 shows the same histograms for oxygen, in  $\mu\text{mol/kg}$ . The differences in oxygen are less than  $\pm 1$   $\mu\text{mol/kg}$  in 63.3 % of cases and less than  $\pm 3$   $\mu\text{mol/kg}$  for 97.4 %, giving a standard deviation of 1.2  $\mu\text{mol/kg}$ .



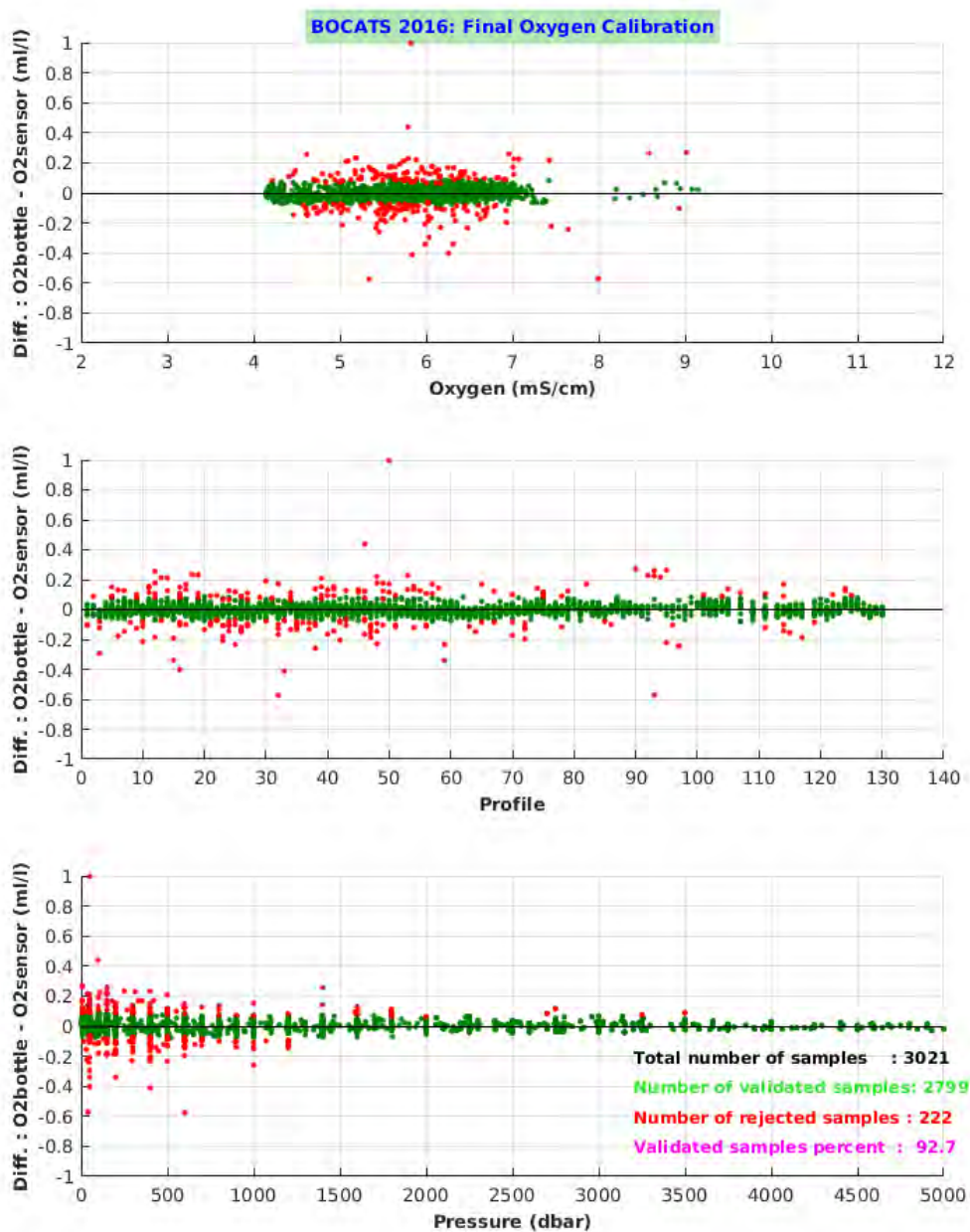
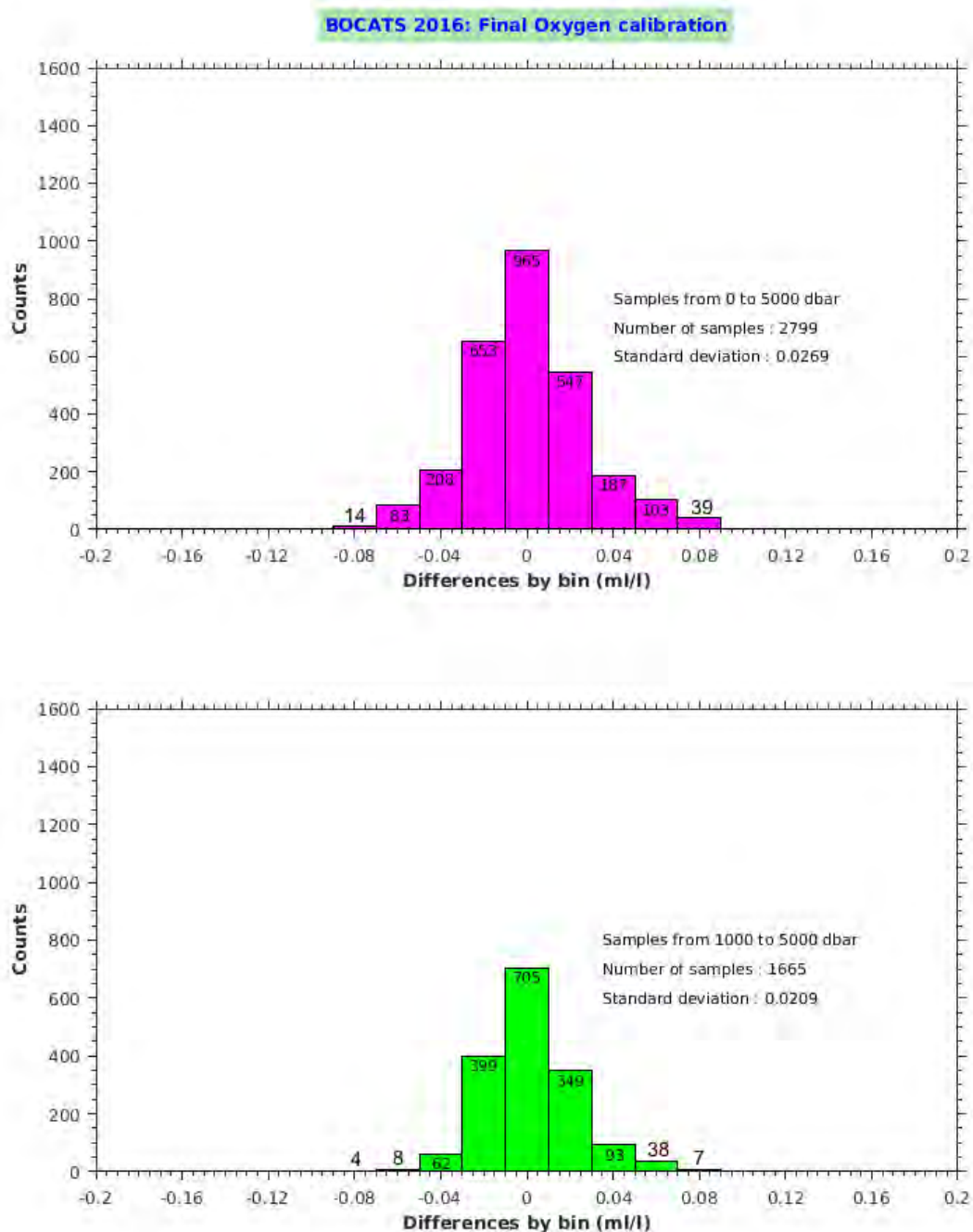


Figure 48: Final Oxygen calibration

Differences between the oxygen value measured on the 2799 validated samples and that of the CTD downcast profile around the sampling pressure (averaged over a 15 dbar interval):

- as a function of the oxygen
- as a function of the number of the profile concerned,
- as a function of the pressure at the sampling level.

These differences are obtained after a specific calculation performed by group of casts.



*Figure 49: Histogram of the Oxygen differences*

*Histograms of oxygen differences (ml/l) between the value measured on the validated samples and that of the CTD downcast profile at the sampling pressure (final measurements):*

- a) for all the 2799 validated samples on the cruise,*
- b) for the 1665 validated samples collected at a pressure greater than 1000 dbar.*

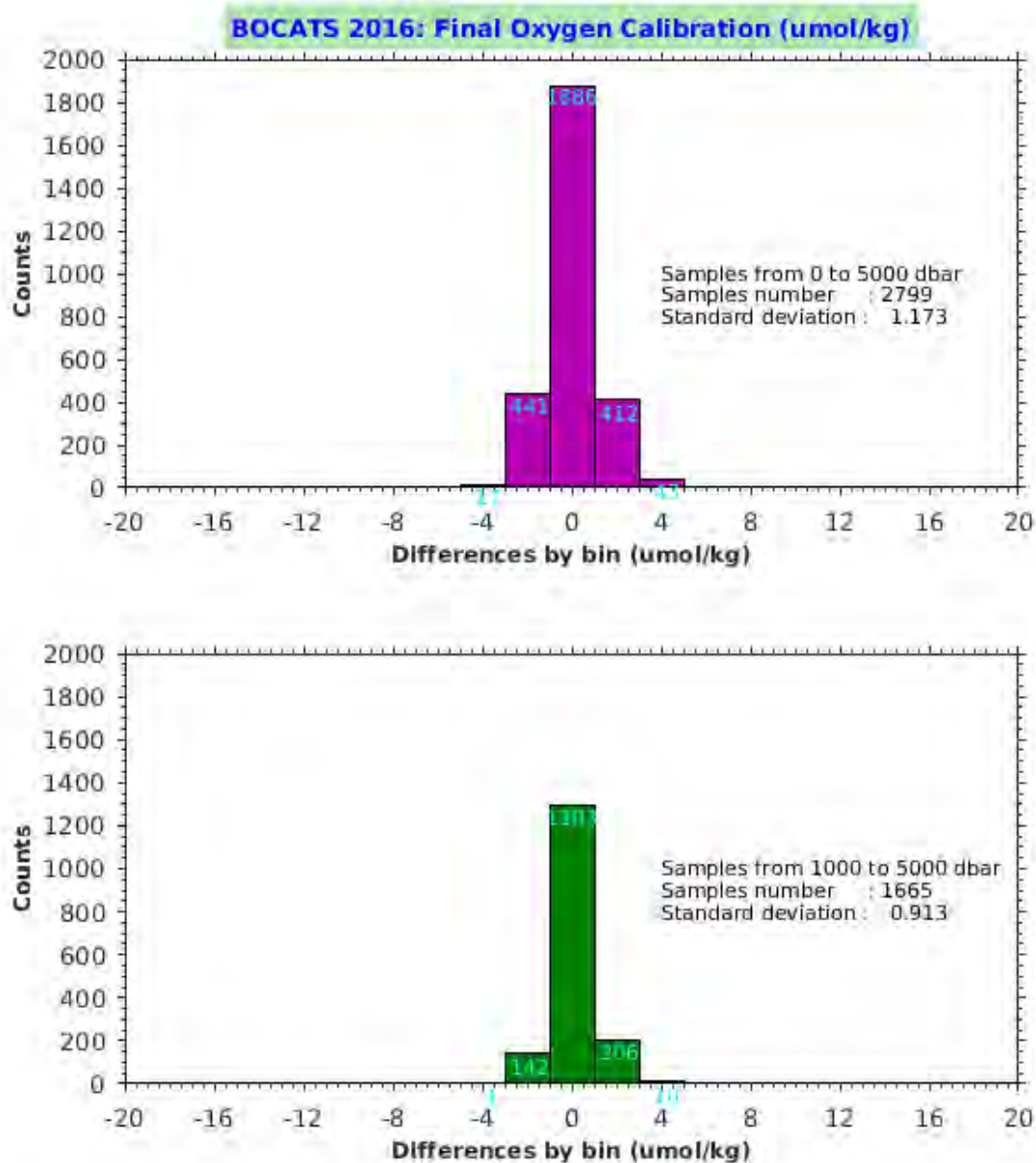


Figure 50: Histogram of the Oxygen differences ( $\mu\text{mol/kg}$ )

Histograms of the oxygen differences ( $\mu\text{mol/kg}$ ) between the value measured on the validated samples and that of the CTD downcast profile at the sampling pressure (final measurements):

- a) for all the 2799 validated samples ( $\mu\text{mol/kg}$ ) on the cruise,
- b) for the 1665 validated samples collected at a pressure greater than 1000 dbar.

### 3.8.5. Validation of the results

The figure 51 compares Theta-O<sub>2</sub> from different cruises (Ovide 2010, Catarina 2012, RREX 2015, BOCATS 2016) made in the same area (D-E-F section ( RREX 2015) on the map, cf 3.7.4).

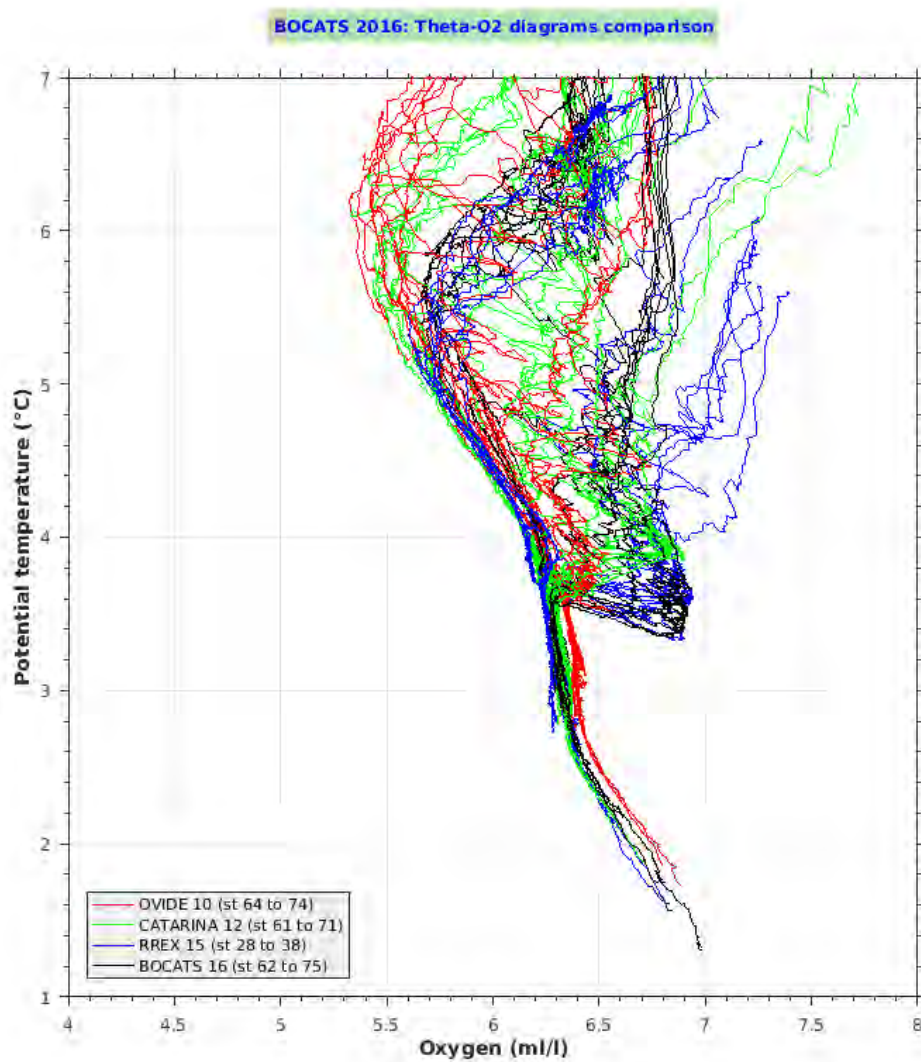
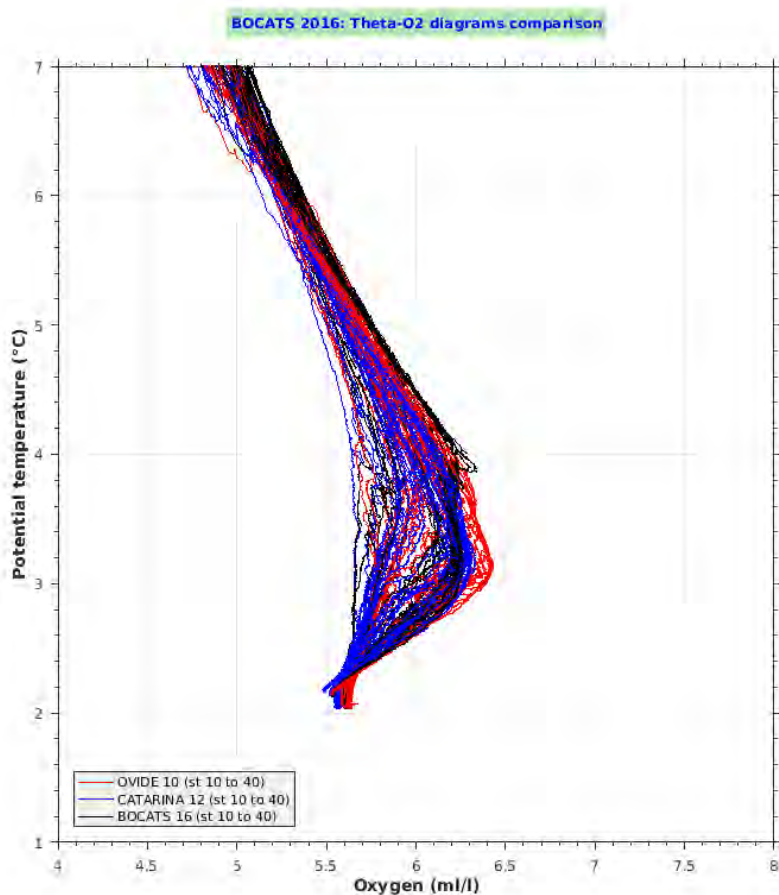


Figure 51: Theta-O<sub>2</sub> comparison.

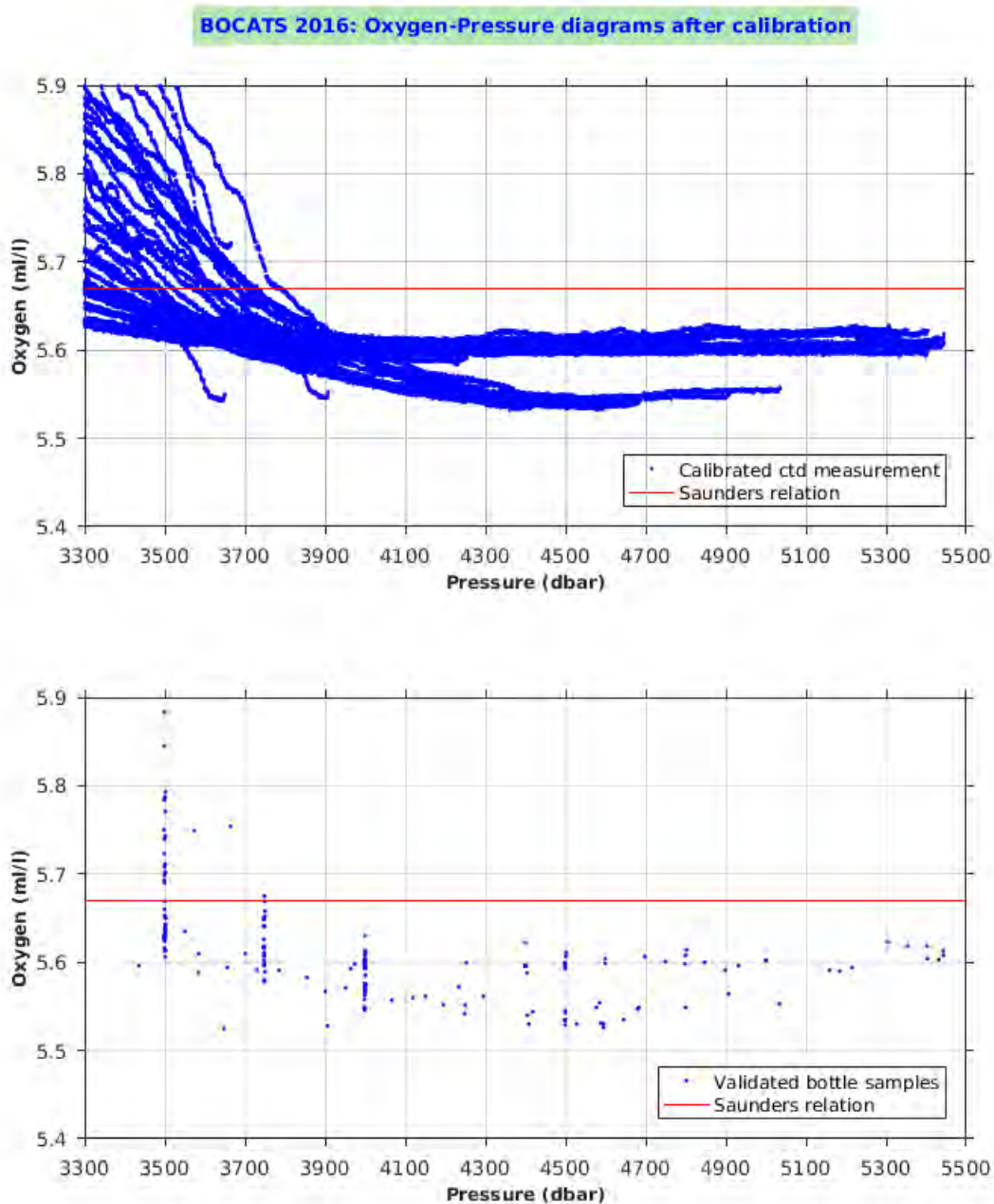
The figure 52 compares Theta-O<sub>2</sub> from different cruises (Ovide 2010, Catarina 2012, BOCATS 2016) made in the same area, Iberic basin.



*Figure 52: Theta-O<sub>2</sub> comparison.*

Figure 53 shows all dissolved oxygen measurements obtained by the Winkler method on the samples, as well as the calibrated dissolved oxygen profiles of the GEOVIDE 2014 cruise. From the results of this cruise, at a pressure greater than 3500 dbar and for the casts carried out in the same geographical zone as the previous cruises, the mean value of the dissolved oxygen measurements is close to that of Saunders, but lower by 0.073 ml/l. However, it is less different than in 2012 where we found a shift of -0.10 ml/l.





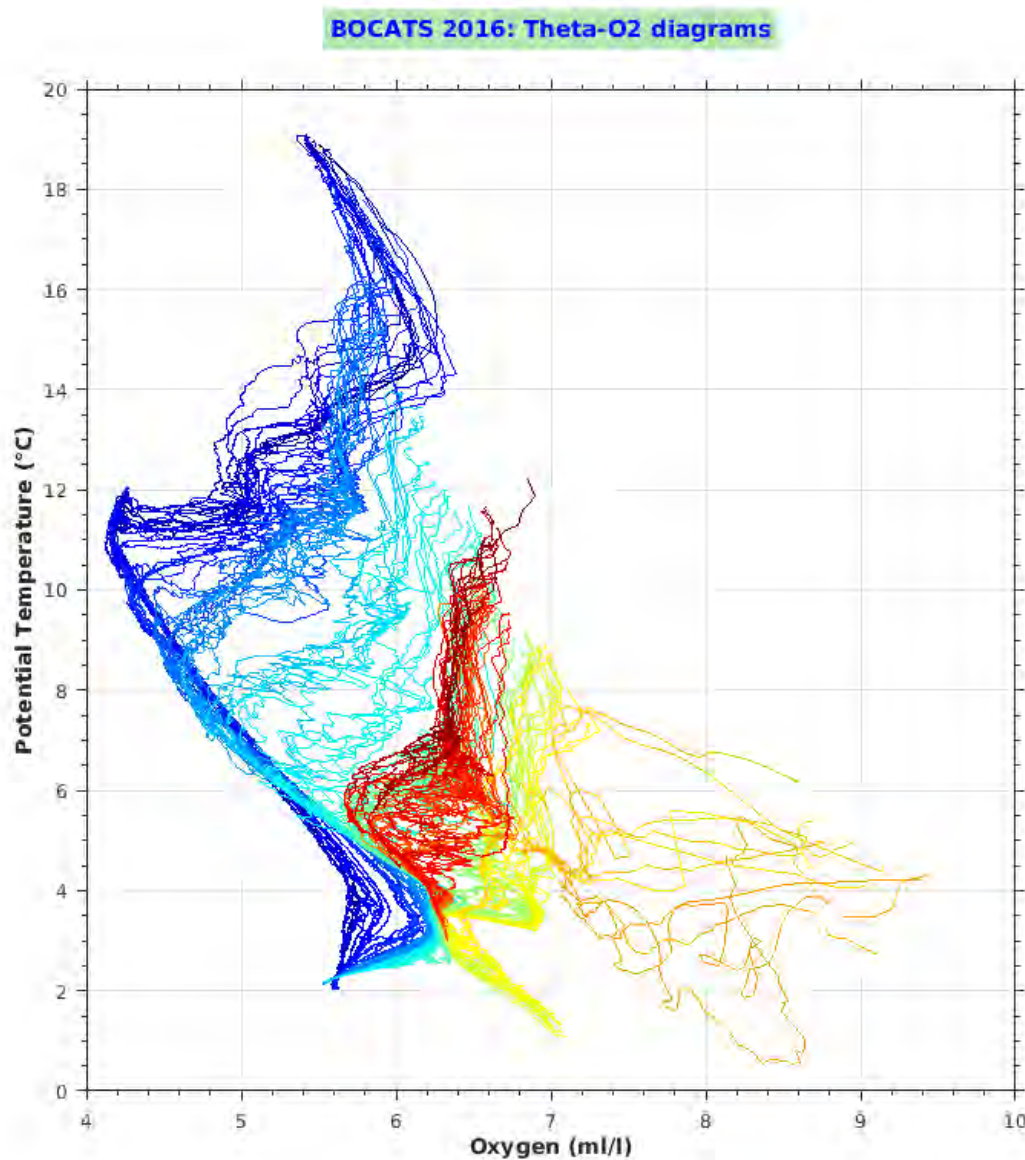
*Figure 53: Oxygen - Pressure diagram*

*Dissolved oxygen measurements (profiles 1 to 50) for the BOCATS cruise at a pressure greater than 3300 dbar:*

- a) continuous measurements on the probe downcast profiles,*
- b) “chemistry” measurements obtained on the samples.*

*The line represents the reference value proposed by Saunders (1986) in the Northeast Atlantic.*

Figure 54 shows all the theta-O<sub>2</sub> diagrams for the BOCATS 2016 cruise.



*Figure 54: Theta-O<sub>2</sub> diagrams*

*Theta-O<sub>2</sub> diagrams for stations of the BOCATS 2016 cruise. The color of the profiles changes gradually from blue to red, from profiles 1 to 136.*

### 3.9. Data reduction

All of the calibration part of the data processing is done based on the total probe measurements at 24 Hz. The data are then reduced to one measurement per decibar and we conserve only the set of sensors (primary or secondary) used during the calibration.

The elimination of non-validated cycles and the data reduction was carried out using the parameter gradients as elimination criteria:

$$abs( (ParamCycle(N)-ParamCycle(N-1))/(PressionCycle(N)-PressionCycle(N-1)))$$

A cycle is validated if the values of the gradients are lower than the selected thresholds. Initially, a determination of the gradient histograms allows us to choose threshold values beyond which the parameters will be rejected. After removal of non-validated cycles, the decimation of the data is performed by calculating, for each integer pressure value, the mean of the parameters on a 1 dbar-layer centered on this value.

The set of criteria used to reduce the probe measurements is described in the document: "Validation et Réduction des données de la sonde SBE9+", C. Kermabon, M. Arhan, Nov 2008.

The options used for the BOCATS 2016 cruise are shown below:

Threshold values for stations 1 to 88 and 100 to 122 (open sea) :

Echant.	1	Nb val min	6
Seuil P	0.5		
Seuil T, C surf	0.8	Seuil T,C fond	0.15
Seuil O (Volt) surf	1.8	Seuil O (Volt) fond	2.0

Threshold values for stations 8 to 99 and 123 to 136 (shelf) :

Echant.	1	Nb val min	6
Seuil P	0.5		
Seuil T, C surf	3.0	Seuil T,C fond	0.5
Seuil O (Volt) surf	3.4	Seuil O (Volt) fond	3.0

The downcast and upcast files were generated in netcdf format:

. bo16d*_cli.nc	for the downcasts
. bo16a*_cli.nc	for the upcasts

### 3.10. Validation of the profiles

The Hydro\_val software (see Hydro\_val: CTD data validation software) first flags as 'bad' (QC = 4), the small number of oxygen peaks which were not eliminated during the data reduction.

The second function of hydro\_val is to analyze the density inversions in order to flag the corresponding T, S, O<sub>2</sub> data as bad, if necessary.

#### 3.10.1. Validation of the Oxygen profiles

The window on the right shows the options used to validate the dissolved oxygen profiles from stations 1 to 136. The downcasts and upcasts are corrected.

List of corrected stations and levels:

Station	Pressure (dbar)
57	2770
82	2766

### 3.10.2. Density inversions

By superposing the reduced file, the adjusted file at 24 Hz and the file before loopedit at 24 Hz on the same graph, we can detect density inversions linked to the drag of the probe.

We can see on the graph below (figure 55) that the peak at 1971 and 1972 dbar in T and C corresponds to the measurements recorded by the probe 3.0 dbar previously. This crossed water (blue arrows) was drawn in by the frame and pollutes the sensors when the probe slows down. These inversions are not at all physical: they must be identified and the quality flag is set to 4 (QC = 4) for all the parameters. During the transfer to the .clc.nc files (intermediate format before the multi-cast format), a linear interpolation will be performed at these locations.

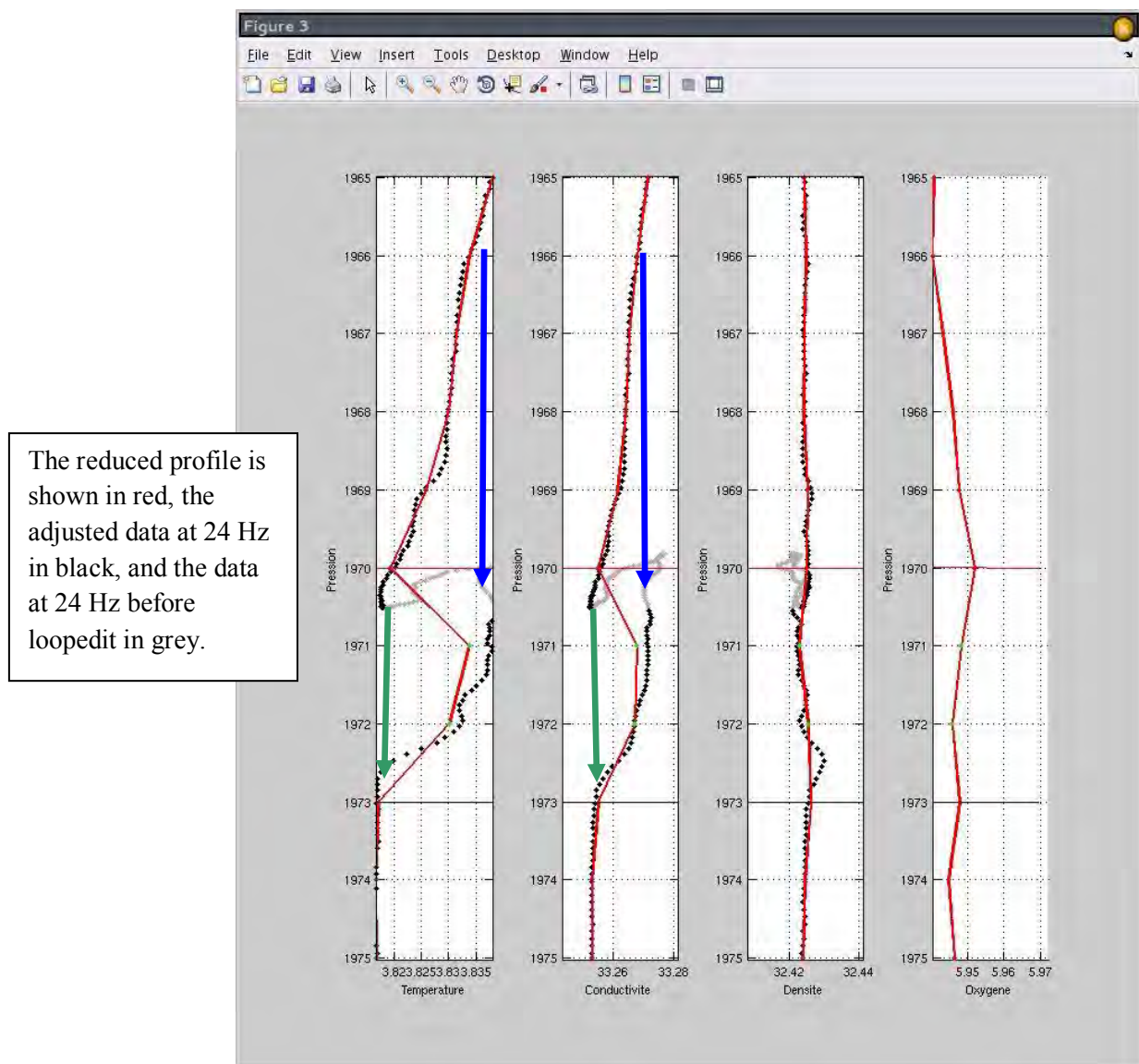


Figure 55: Exemple of invalidation of density inversions.



Hydro\_val allows to remove the sensor value (T, C, O2) that will be replaced by a linear interpolation between 1970 dbar and 1973 dbar as shown by the green arrows.

For BOCATS 2016 cruise, we corrected only downcast.

List of corrected stations and levels:

```
-----
| Cruise : CATARINA 2012 |
| List of density anomalies corrections |
|-----|
```

\*\*\*\* Density anomalies (downcast) \*\*\*\*

Profile	Pressure	Profile	Pressure	Profile	Pressure	Profile	Pressure
1	5	33	814	39	737	66	119
1	138	33	911	39	2445	66	568
1	139	33	919	40	150	66	569
1	140	33	920	40	421	66	707
2	145	33	1002	40	721	66	708
2	376	34	14	40	765	66	829
2	377	34	18	40	766	66	830
6	257	34	406	41	235	66	839
10	20	34	426	41	468	66	840
11	1040	34	504	41	477	66	895
12	134	34	539	41	773	66	905
12	1555	34	772	42	55	66	906
15	1077	34	773	42	931	67	55
16	822	34	992	43	9	67	86
16	1010	34	1174	44	195	67	192
16	1011	34	1182	44	196	67	320
16	1425	34	1183	46	699	67	321
16	1440	34	1218	47	87	67	379
16	1487	34	1350	47	100	67	568
16	1554	35	49	47	469	67	672
16	1555	35	151	47	477	67	673
16	1751	35	327	47	493	67	698
17	42	35	336	47	501	67	879
17	47	35	398	47	502	67	880
17	48	35	563	47	1779	67	886
17	726	35	591	48	43	67	887
17	918	35	601	48	704	67	929
17	927	35	620	48	705	67	1095
17	1060	35	629	48	713	67	1096
17	1061	35	712	48	714	68	51
17	1212	35	939	48	840	68	398
17	1220	35	1910	49	260	68	451
17	1283	35	2419	49	591	68	654
17	1328	35	2608	49	592	68	655
18	662	35	2609	49	599	68	678
18	791	36	57	49	600	68	679
18	792	36	111	49	717	68	1083
18	942	36	112	49	808	68	1084
18	1444	36	135	50	168	69	105
19	831	36	136	54	112	69	106
19	1104	36	145	56	253	69	128
20	40	36	146	56	254	69	129
20	98	36	163	56	388	69	150
20	455	36	164	57	80	69	151
20	1034	36	174	57	177	69	152
20	1242	36	229	57	271	69	266
25	48	36	230	57	279	69	277
26	761	36	378	57	404	69	1452
27	99	36	392	57	414	71	85
27	108	36	393	57	424	72	14
27	109	36	394	57	425	72	26
27	614	36	484	57	433	72	70
27	634	36	513	57	465	72	110
27	653	36	522	57	466	73	70
27	777	36	594	57	752	73	80
27	778	36	595	57	2078	73	81
27	801	36	627	57	2079	73	91
27	874	36	628	58	20	73	92
27	1118	36	691	58	175	73	102
27	1129	36	704	58	541	73	2982
27	1472	36	715	58	549	73	2983
28	56	36	716	58	550	73	2993
28	77	36	741	58	806	73	2994
28	106	36	742	58	807	73	3015

28	728	36	752	58	1073	73	3026
28	729	36	799	58	1990	74	64
28	1175	36	835	59	214	74	2770
28	1176	36	836	59	470	74	2963
28	1808	36	881	59	471	74	2964
29	72	36	892	60	101	74	2975
29	82	36	930	60	1038	74	2976
29	272	36	1062	61	89	75	3061
29	554	36	1071	61	132	75	3064
29	563	36	1072	61	138	75	3072
29	649	36	1137	61	459	75	3131
29	783	36	1138	61	592	76	21
29	784	36	1243	61	593	76	79
29	1144	36	1244	61	1951	76	89
29	1370	36	1255	62	236	76	3102
29	1412	36	1267	62	1924	77	3036
29	1413	37	69	63	210	77	3098
29	1421	37	79	63	256	77	3099
30	593	37	80	63	257	77	3152
30	781	37	142	63	405	80	2784
30	866	37	143	63	406	81	2801
30	867	37	144	63	1877	82	2746
30	887	37	275	64	10	98	156
30	930	37	511	64	124	103	1803
30	949	37	649	64	125	103	1804
30	2586	37	660	64	196	107	104
30	2587	37	661	64	197	110	57
31	48	37	681	64	393	110	175
31	251	37	785	64	394	110	731
31	462	37	794	64	542	110	1351
31	664	37	795	64	663	110	1352
31	879	37	804	64	664	110	1357
31	880	37	805	64	665	110	1495
31	947	37	814	64	997	111	119
31	1013	37	824	64	998	111	120
31	1014	37	835	64	1561	111	487
31	1128	37	1064	65	53	112	790
32	84	37	1133	65	62	112	868
32	649	37	1154	65	114	115	55
32	650	37	1155	65	411	115	56
32	657	37	1332	65	595	115	1327
32	940	37	1333	65	753	115	1328
32	949	37	1342	65	790	115	1334
32	983	37	2113	65	908	119	134
32	1163	37	2187	65	909	124	67
32	1213	38	32	66	45	129	632
32	1279	38	33	66	59	130	693
32	1280	39	28	66	85		
33	72	39	92	66	92		

### 3.11. Accuracy of the BOCATS measurements

The calibration of the CTD measurements ends with the determination of the accuracy of the different types of measurements (probe, chemistry).

The accuracy given by the manufacturer for the different CTD sensors is:

Pressure	1.0 dbar
Temperature	0.001 °C
Conductivity	0.003 mS/cm
Oxygen	± 2 % of saturation

During the calibration, we determine the accuracy for each sensor from statistical calculation between reference measurements and probe measurements.

The table below shows the accuracies obtained for BOCATS 2016.

Probe Param.	Value	Unit	Chemical Param.	Value	Unit
PRES	1.0	dbar			
TEMP	0.0019	°C			
COND	0.0010	mS/cm			
PSAL	0.0010	psu	CHPSALB	0.0011	psu
OXY	0.027	ml/l	CHOXYLB	0.020	ml/l
OXYK	1.2	μmol/kg	CHOXYKB	0.87	μmol/kg
			CHTMPOB	0.3	°C

### 3.12. Corrections of BOCATS 2016 calibrated profiles

. station 128

Replacement of temperature and conductivity values at pressure 653 by the values at pressure 652.

. station 136

Replacement of temperature, conductivity and oxygen values at pressure 130 by the values at pressure 129.

### 3.13. Corrections of the flags of the oxygen chemical data

Using downcast CTD O<sub>2</sub> data at the pressure of the bottle samples to compare with oxygen sample measurements have several advantages:

- we gain precision since the rosette has less influence on the data when it's moving downward
- we reduce the impact of the hysteresis effect on the oxygen sensor that is never totally corrected (indeed, the influence of the pressure on O<sub>2</sub> measurements is weaker during the downcast than during the upcast).

However, the drawback is that we also don't consider the changes in the water column between the upcast and the downcast. In the upper water column, those changes are mainly due to internal waves that heave the water masses up and down by several tens of meters (Saout-Grit et al., 2015), particularly in the upper water column.

For the OVIDE-BOCATS data, this is not really an issue for the calibration, since we have many samples, and the chemical data that don't match the CTD-O<sub>2</sub> data because of this effect are simply discarded from the calibration. Among the 2444 samples, only 218 were moved out by the calibration because of a too large discrepancy with the probe data. However, the side effect is that these chemical data were flagged bad, although 154 were actually within 3 standard deviation from the profile if we consider either the upcast data or the downcast data adjusted in density.

Since chemical data are distributed and widely used (particular by biogeochemists), it is important to flag the data the best we can. This is why CTD-O<sub>2</sub> data and flags of chemical oxygen data are corrected after calibration in the final chemical database by associating the sample measurement to its best match with CTD data between (i) the downcast point adjusted in pressure (i) the downcast point adjusted in density and (iii) the upcast point at the effective level where the bottle was closed. This way, 154 chemical data were rehabilitated, leaving only 64 data flagged bad.

This processing improved also greatly the histogram of the difference between CTD and chemical data, with a standard deviation down to 0.8 instead of 1.2  $\mu\text{mol.kg}^{-1}$ . The mean at 0.1  $\mu\text{mol.kg}^{-1}$  could be clearly attributed to the difficulty to correct the hysteresis on the probe sensor.

Note finally that those correction don't affect the calibration results and that the CTD-O<sub>2</sub> oxygen profiles were not corrected. The above changes appear:

- in the ascii and excel sheet of the chemical data.
- in the chemical data of the the multi-station netcdf file (variables CHPOXYLP, CHOXYLB\_QC, CHPOXYKP, CHOXYKB\_QC).

Chemical data in the cli and clc netcdf files have not been changed.

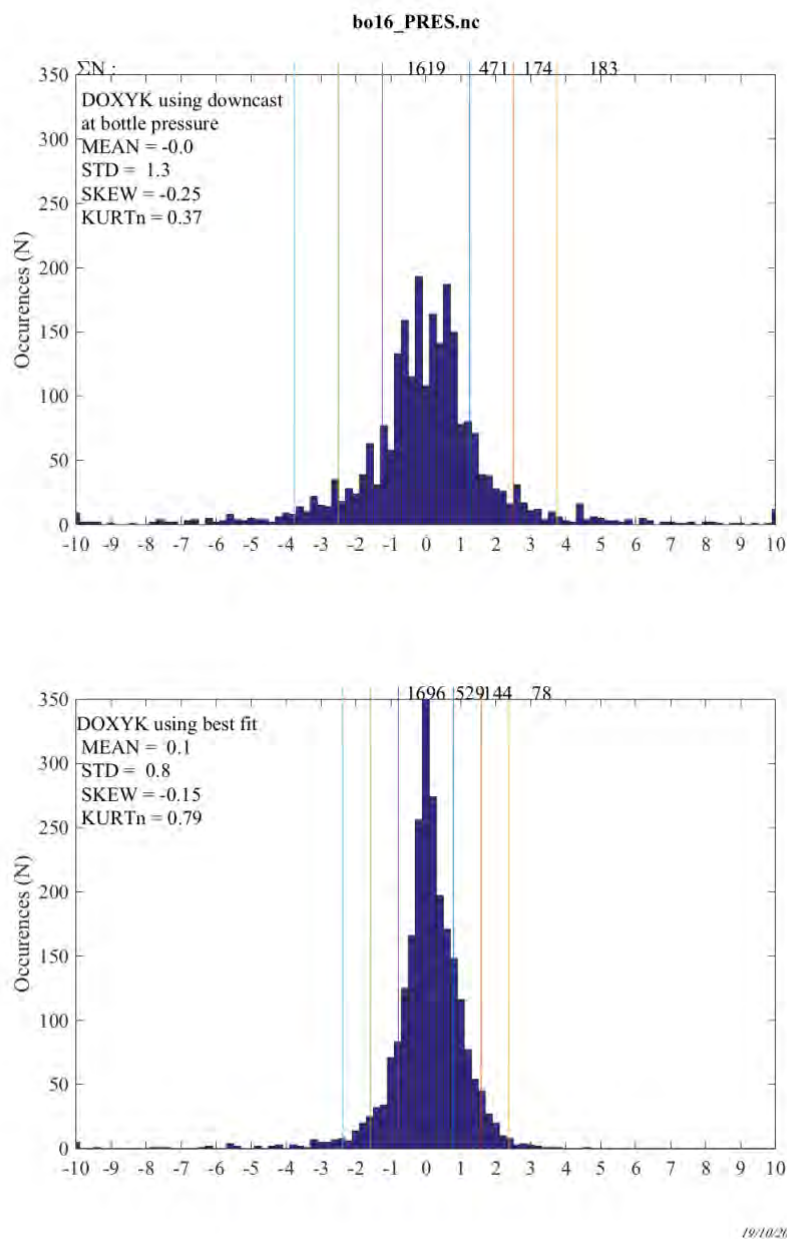


Figure 56: Histogram of the oxygen difference between the chemical measurements flagged good and the probe data, in  $\mu\text{mol.kg}^{-1}$ , (a) using only downcast data at the bottle pressure level, and (b) using the best match between chemical and probe data by using either upcast data, downcast data at the bottle pressure level or downcast data at the bottle density level.



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## 4. CTD RESULTS

### *Equipment*

For the hydrology acquisition, we used the Seabird 911+ CTD probe (s/n. 813) of the LOPS on a 2-floor rosette equipped with 28 bottles of 8 liters. Two high-precision thermometers and pressimeters were used on the first and third bottle to monitor the drift of temperature and pressure of the probe. We systematically used two sets of temperature, conductivity and dissolved oxygen sensors.

We had neither failure nor noise on the signal during the whole cruise. The bottles were closed at different depths for sampling in order to measure different parameters, including salinity and oxygen. Those two variables were measured in the LOPS laboratory container in order to calibrate the CTD data. Closing the bottles with stainless steel springs provided both excellent isolation of the sampled water (there were very few leaks) and no pollution of the CFC sampling. We borrowed 28 Seabird taps from the UTM team since the installed ones were not compatible with the CFC sampling system.



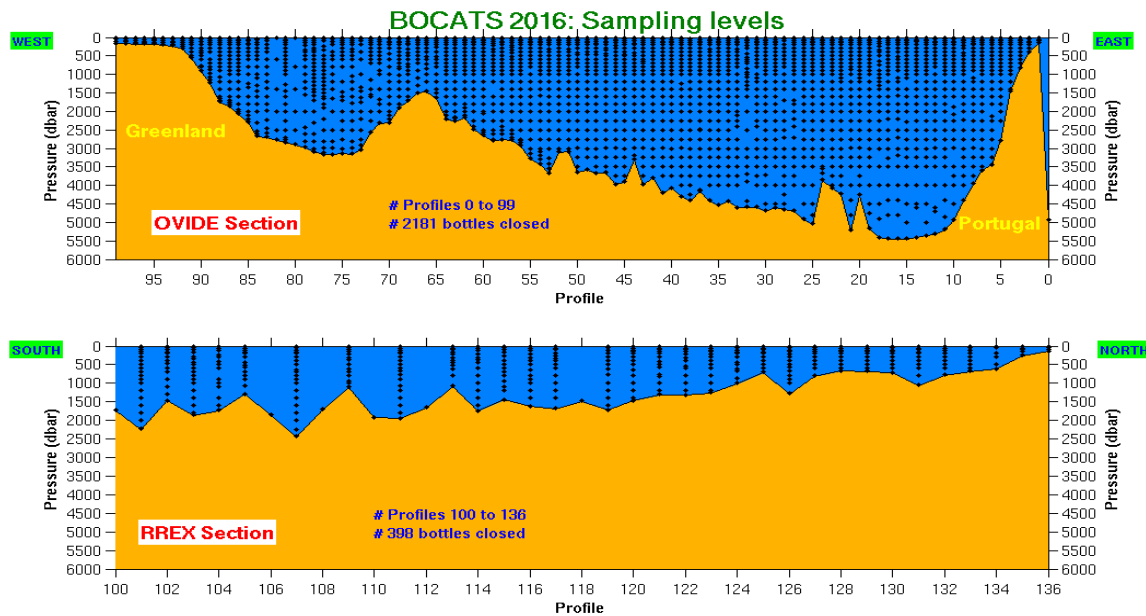
### *Calibration of salinity and oxygen (M. Hamon, P. Le Bot, P. Branellec).*

During the 137 hydrological stations, 2579 bottles were closed. From those bottles, 2501 salinity samples were taken and analyzed with a Guildline Portasal salinometer. Besides, 2472 dissolved oxygen samples were taken and analyzed with a Metrohm 798 titrinos. The position of the samples in the water column is shown in the [Figure 3](#).

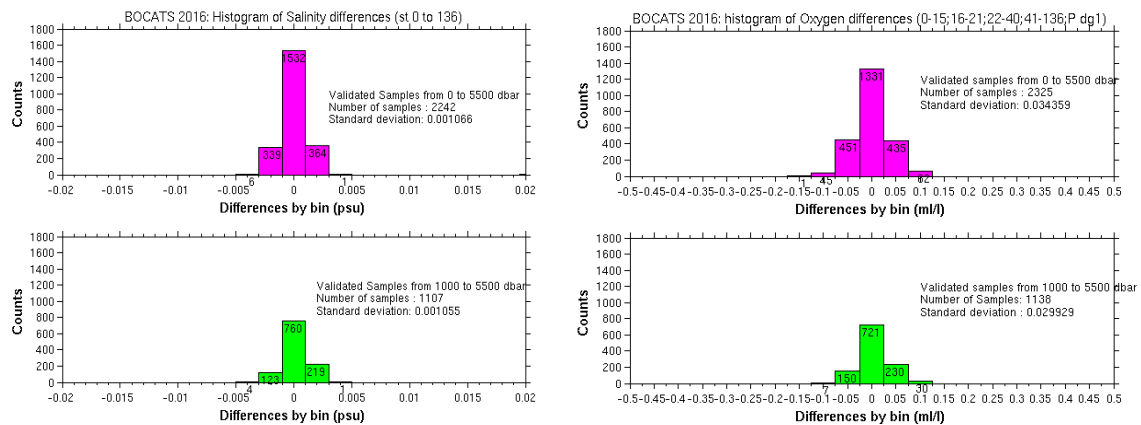
A pre-calibration led to a very good consistency between the CTD probe and the chemical data: the standard deviation of the difference is 0.001 for salinity and 0.03ml/l for dissolved oxygen, i.e. compatible with the international GO-SHIP standards ([Fig. 4](#)). The sections of potential temperature, salinity, dissolved oxygen and Apparent Oxygen Utilization, after pre-calibration are shown in [Figures 5 and 6](#).

Along the OVIDE section, we confirm the extension of the subpolar gyre towards the south-east, as already observed in 2014 during the GEOVIDE cruise. Two new features appear, that can be potentially very important for the future: i) the presence of low-salinity layer at the

surface of the subpolar gyre, that will be better understood by the measurements of  $\delta^{18}\text{O}$  taken at the surface for Gilles Reverdin (LOCEAN, Paris), and ii) the deepening of the ventilated layer down to 1500m in the Irminger Gyre. The latter is consistent with the depth of the deep convection observed by ARGO floats during the three previous winters.

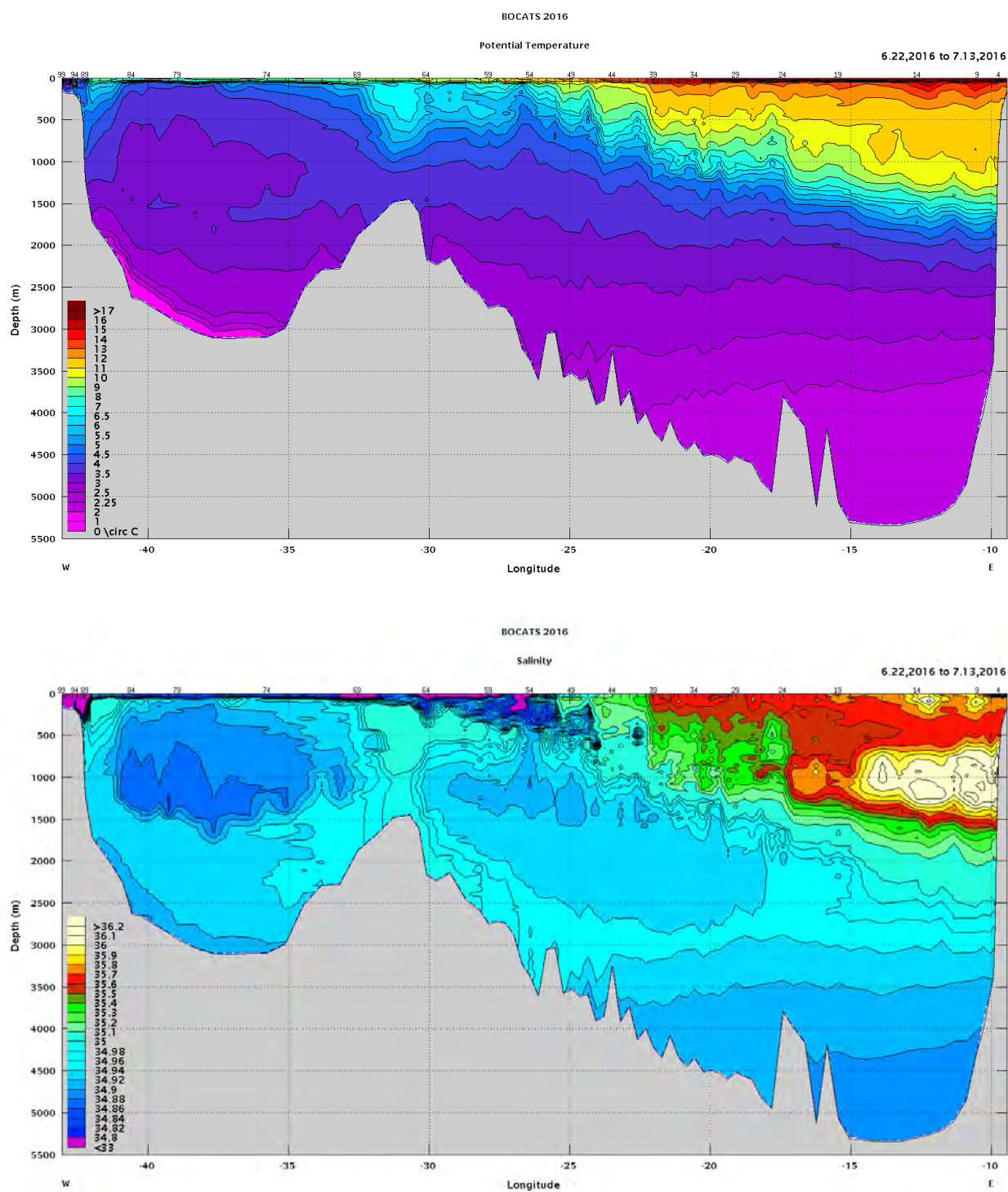


**Figure 3:** OVIDE and RREX sections showing the position of the water samples.



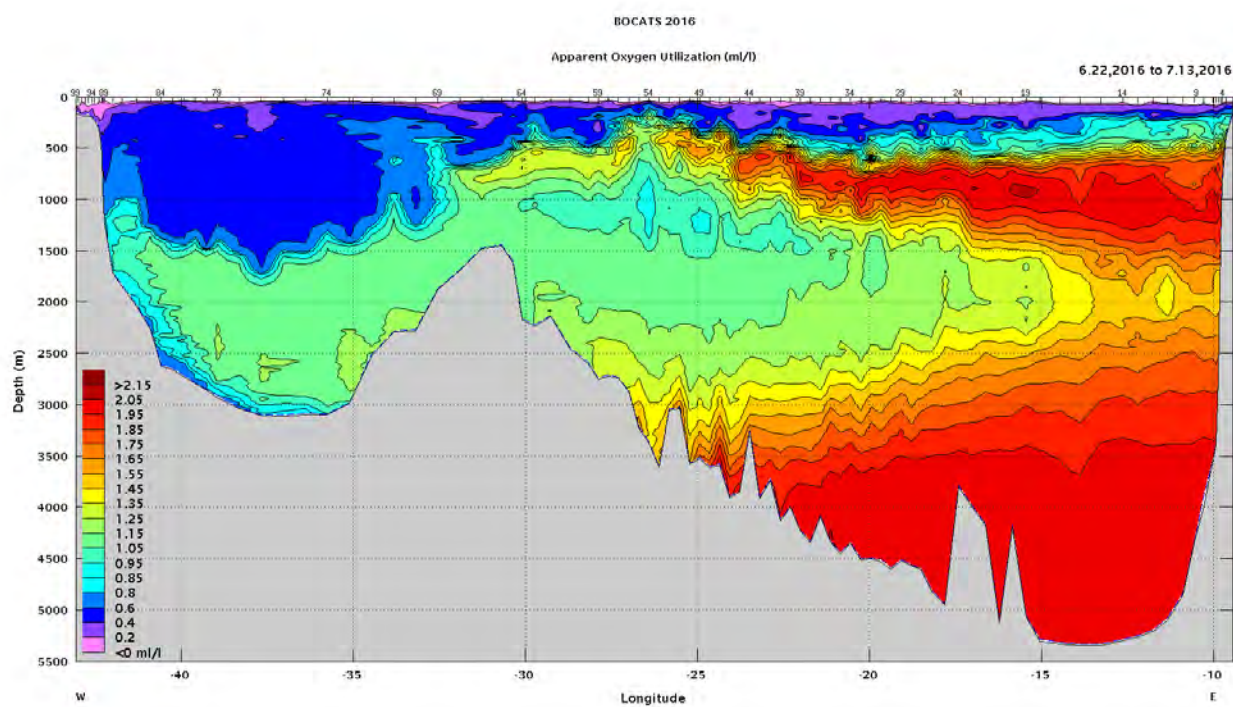
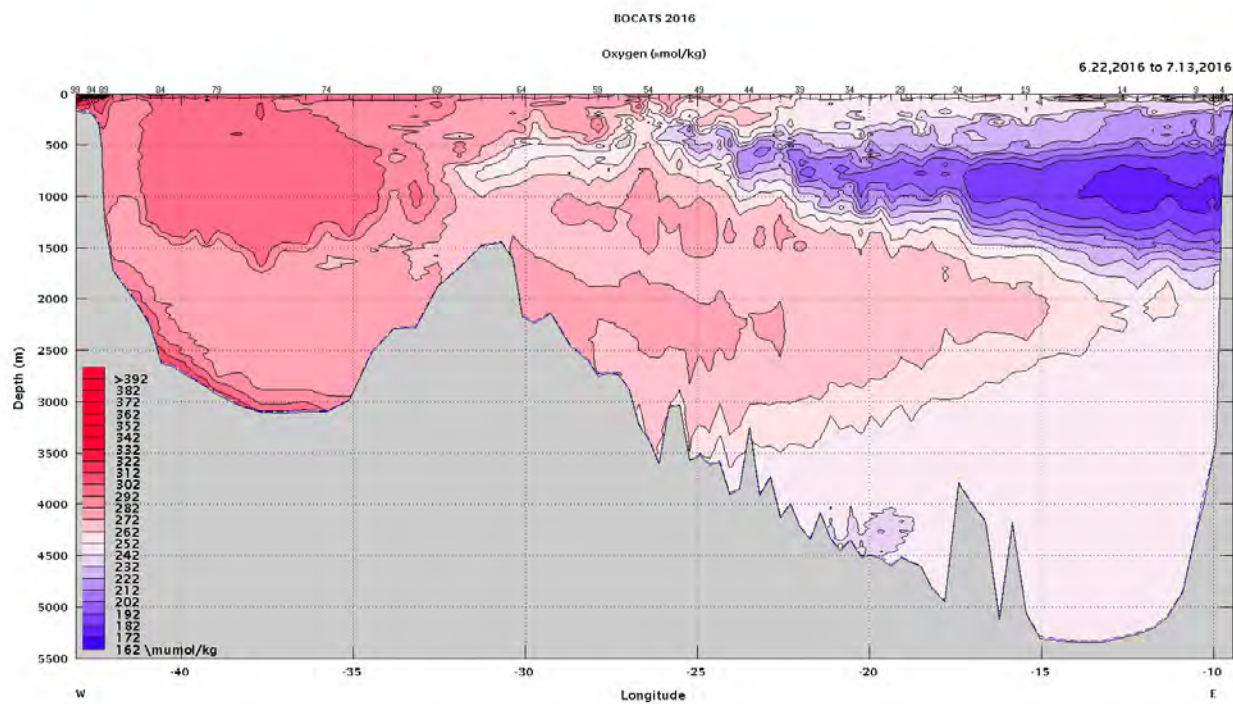
**Figure 4:** Histograms of differences between the CTD probe and the chemical analysis for salinity (left) and dissolved oxygen (right) after precalibration

*OVIDE sections (C. Lagadec & P. Lherminier).*



**Figure 5:** BOCATS-OVIDE section in 2016: temperature and salinity after pre-calibration

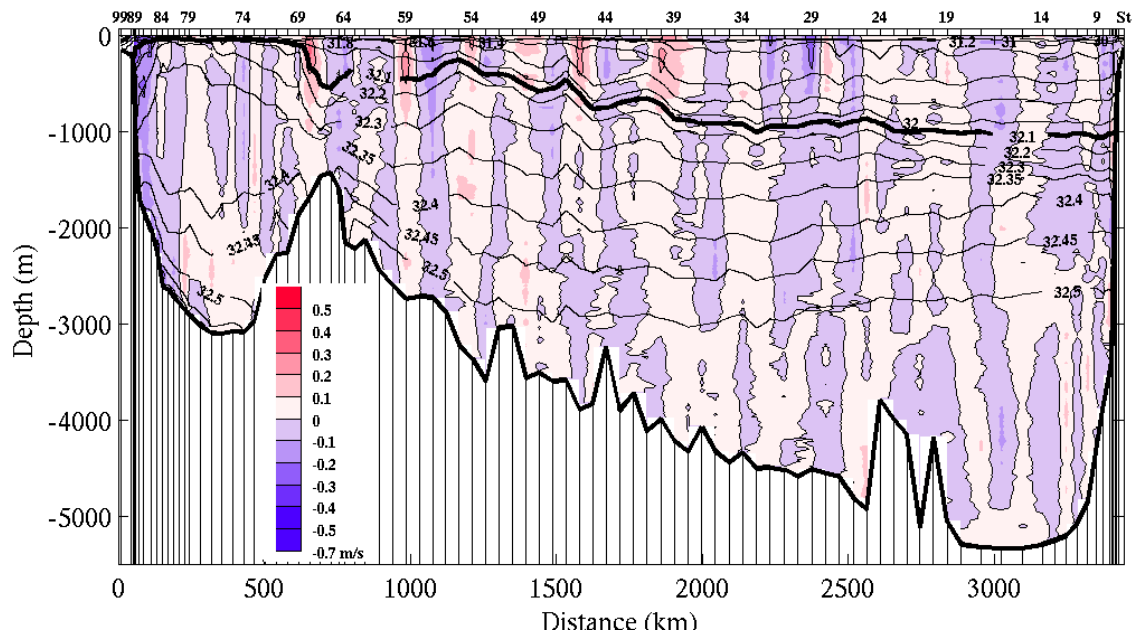




**Figure 6:** BOCATS-OVIDE section in 2016: Dissolved oxygen and Apparent Oxygen Utilization, after pre-calibration.

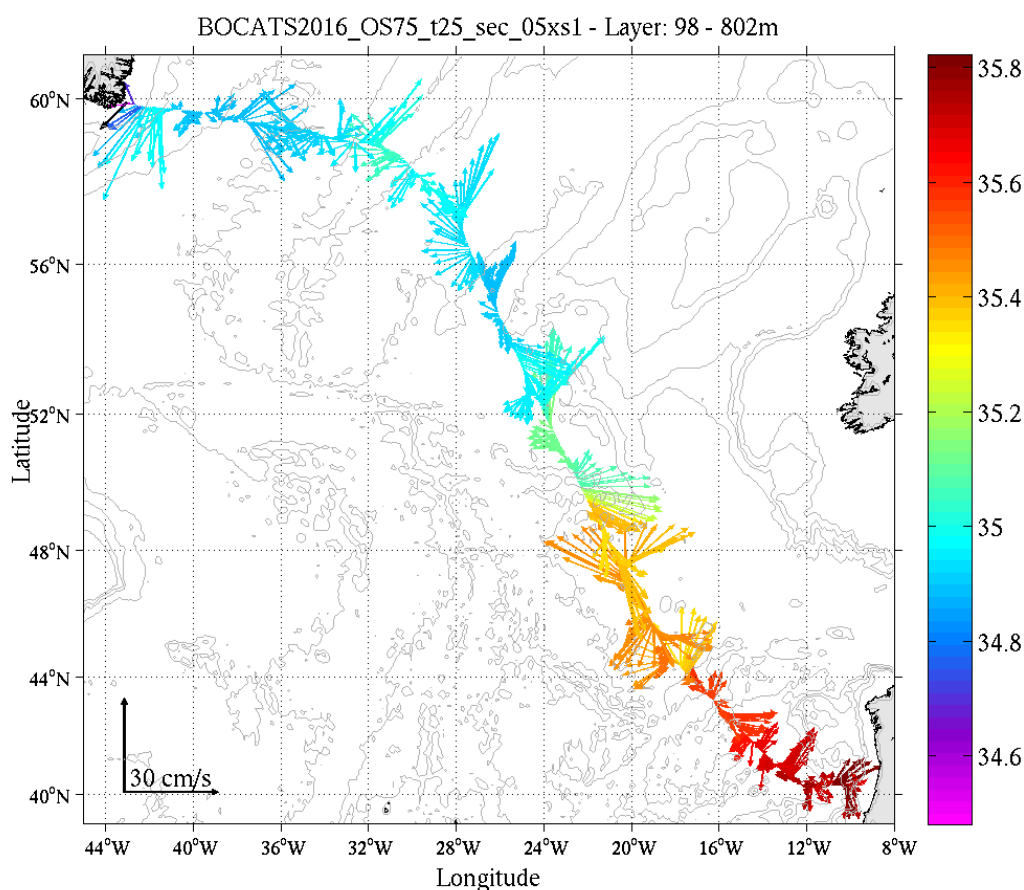
Two yellow LADCPs can be seen on the picture of the rosette: a WH150kHz looking down and a WH300 looking up. They were both tested on a previous cruise without the CTD. Despite the unexpected importance of the interferences between the WH150 and the 200kHz altimeter of the rosette, we could obtain reasonable profiles of velocities for all the stations (note that on the shelves, the LADCPs were not turned on). We had to change the star-cable (connecting the LADCPs between them and with the batteries and the external PCs) in the middle of the cruise, before station 85. As usual, the signal to noise ratio is much better in the subpolar gyre, where water is richer in particles that reflect the acoustic signal.

All the profiles were processed by P. Lherminier with the LDEO software (version 10.16) written by M. Visbeck and G. Krahnemann. The bottom velocities were immediately given to the sediment team to interpret their data.



**Figure 7:** BOCATS-OVIDE section of currents as measured by the LADCPs (interpolated from stations).

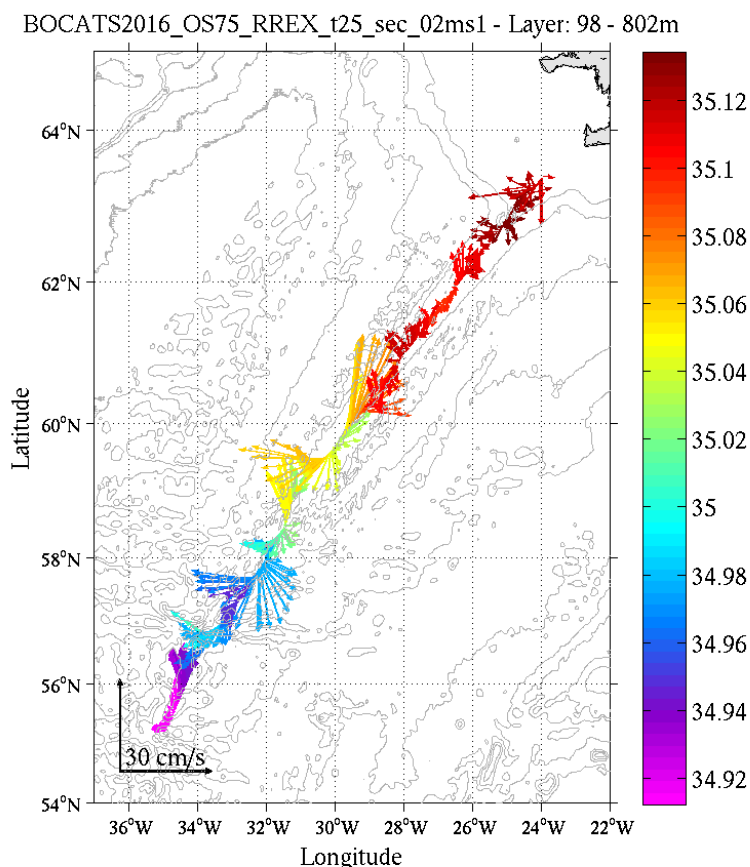
Two SADCPs (Ocean Surveyor model of RDInstruments) are installed on the Sarmiento de Gamboa in a “quilla” that can be lowered at 10m below the surface: one at 75kHz and one at 150kHz (called OS75 and OS150 respectively). Both were connected with a cable to ensure synchronization, the OS75 being the master. After some difficulties with the NMEA input that did not include the \$PASHR lines required by the software, we finally manage to make them work as soon as the survey began. The OS75 was tuned in Narrow Band to get the maximum range possible (about 820m), and the OS150 in broad band to have more precision in the surface layers (down to about 250m, but sometimes less). The OS75 worked perfectly, giving excellent continuous data along the whole cruise without a single failure. The range of the OS150 was a little disappointing, but the data could be used to validate the OS75 data as expected.



**Figure 8:** Currents averaged between 100m and 800m along the BOCATS-OVIDE section, measured by the OS75

The data were all processed by P. Lherminier with the Matlab software CASCADE V7.0 created and maintained at the laboratory. The alignment ( $45.13^\circ$ ) and amplitude of the OS75 were good and not corrected. To improve the estimate of the vertical velocities, the pitch was corrected by  $2.5^\circ$ . The alignment already implemented in VmDAS for the OS150 was obviously wrong. The correct value is most likely  $45.78^\circ$ . The amplitude correction has different estimates

depending on the way to estimate it (bottom track or correlation method). This is why we ended the cruise with a cross on the Iceland Shelf to estimate it more precisely, along with the alignment; those data will be analyzed on shore. However, with unchanged amplitude, an alignment corrected to  $45.78^\circ$  and a pitch corrected by  $2.5^\circ$ , we obtained a mean difference between both OS of 0.03 and 0.56 cm/s for the zonal and meridional velocities respectively in the 80-180m layer, with a standard deviation of 1.7 cm/s. This is better than the precision of the instruments given by the manufacturer (RDI) in the chosen configuration, i.e. 2.5 cm/s for the OS75 and 1.25 cm/s for the OS150.



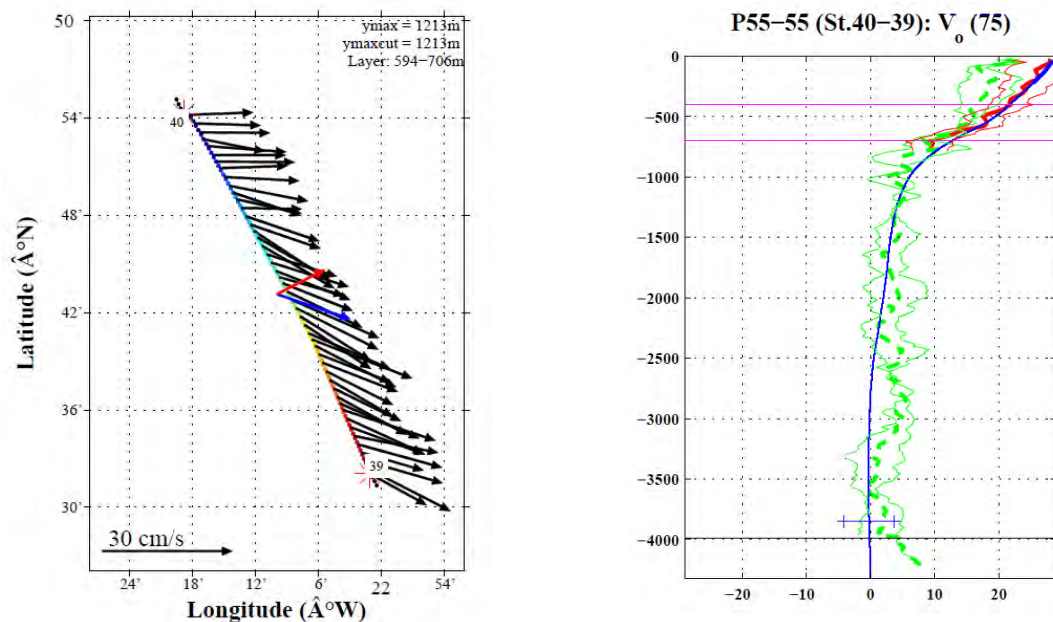
**Figure 9:** Currents averaged between 100m and 800m along the Reykjanes Ridge section, measured by the OS75

On the OVIDE section (figure 8), the SubArctic Front that delimits the eastern rim of the Subpolar Gyre stands out at  $49.5^\circ\text{N}$  by its gradient of salinity (from 35.4 to 35.1) and the strong northwestward current. Further north, the circulation around Reykjanes Ridge and the Western Boundary Current (WBC) were found apparently similar to previous observations, although the WBC appeared stronger when we reran the section backwards 2 days later. As usual, the North Atlantic Current between  $44^\circ\text{N}$  and  $55^\circ\text{N}$  is very meandering.

Along the Reykjanes Ridge, the currents were significantly influenced by the tide. Once de-tided (Fig. 9), the flux was mainly westward, except for an eddy at  $58^\circ\text{N}$ . The positive



gradient of mean salinity reveals the increased importance of Atlantic Central Water on the ridge when going north.

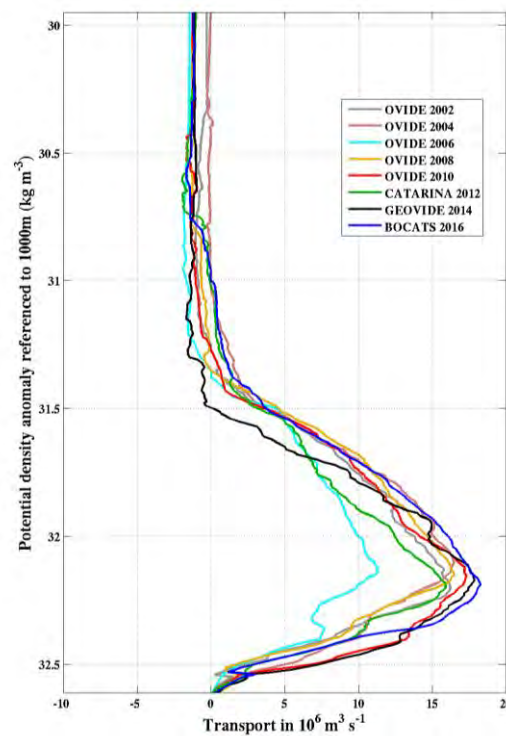


**Figure 10:** (a) Currents in the 600-700m deep layer between stations 39 and 40, average in blue and projection in red. (b) Comparison of geostrophic profile (blue), LADCP profiles and their average (green) and SADC mean velocity profile (red).



The high quality of the OS75 and hydrological data allows the synthesis of those data with an inverse model to estimate the transports across the OVIDE section. The OS75 velocities are averaged between stations and projected perpendicularly to the section (Fig. 10, left). An error is set based of the standard deviations of the velocity profiles. This mean profile of velocity is compared with the geostrophic velocity profile calculated from the horizontal density gradient of the CTD data (Fig. 10, right). The example shown on Figure 10 is a pair of stations in the SubArctic Front. The OS75 data helps to determine the velocity at the reference level in the model (chosen at 3800m in the example below).

The depths and the a priori velocities at the reference levels were chosen as for the previous OVIDE cruises. The inverse model is also constrained by an overall transport of  $1 \pm 3\text{ Sv}$  northward across the section (corresponding to the Arctic mass balance). The transport of silicates was computed but not used as a constraint. The preliminary inversion gives results that are very consistent. The amplitude of the  $\text{MOC}_\sigma$  is found at  $18.2\text{ Sv}$  with an error of about  $2\text{ Sv}$ . The final net transport across the section has the same value than the constraint:  $1 \pm 3\text{ Sv}$ . The heat flux across the section is found at  $0.53 \pm 0.07\text{ PW}$ , and the silicate transport at  $38\text{ kmol/s}$  to the north (a little high but very reasonable for preliminary data). The baroclinic transport profiles (Fig. 11) shows that BOCATS sampled the strongest MOC of the last 14 years.



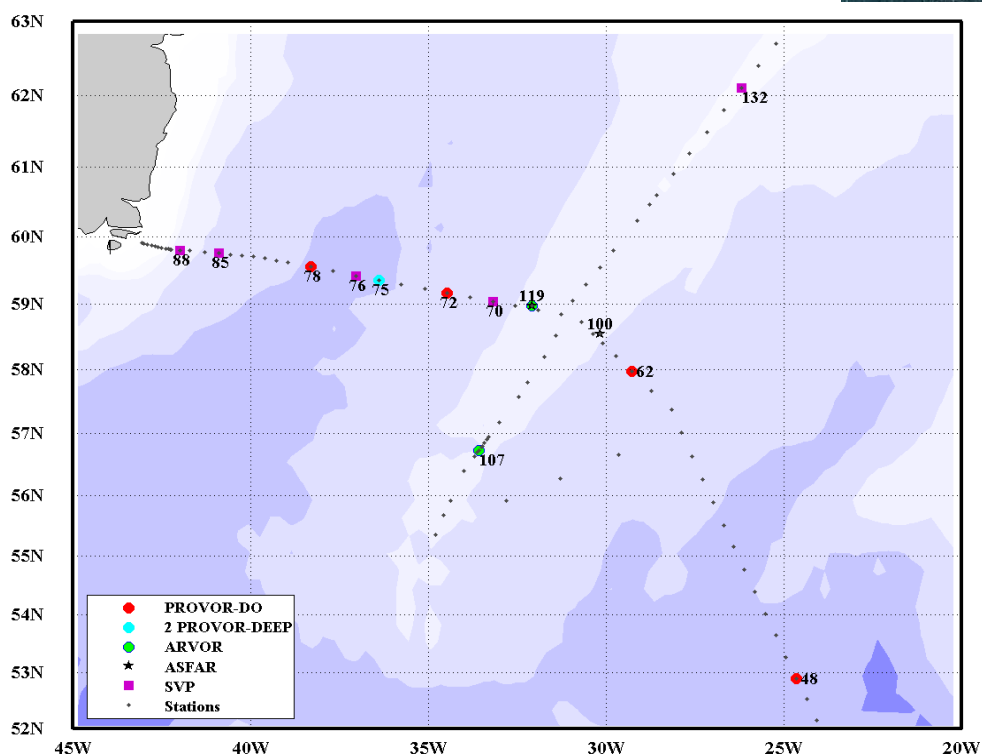
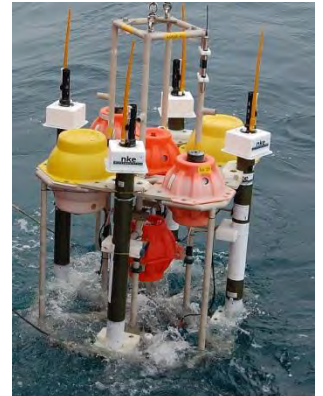
**Figure 11:** Transports across all OVIDE sections integrated in sigma layers and accumulated from the bottom after a sign change; the amplitude of the  $\text{MOC}_\sigma$  is at the maximum of each curve.

## 5. DEPLOYMENTS OF BUOYS AND ASFAR

(S. Leizour, M. Hamon, P. Le Bot & P. Branellec)

The PROVOR floats are part of the international ARGO network. Each float drifts during ten days at around 1000 m, then dives down to 2000 m and comes up to the surface and collects vertical profiles of data. The data are transmitted (Argos/Iridium) to satellites when the float is at the surface. After transmission, the float starts a new cycle and dives to its parking depth at 1000 m for the next 10 days. The floats called PROVOR-DEEP have a deeper parking depth (2100m) and profile down to 3500m. All floats are equipped to measure temperature and salinity. Some of them, called “DO”, also have dissolved oxygen sensors.

A launching platform, called ASFAR (Autonomous System For ARGO float Release), was developed at LOPS (above on the left). It is a structure equipped with 4 ARGO floats of ARVOR type that are released one by one every 3 months after the deployment of the platform on the ocean floor. It aims at sampling specific areas where we need more information on the seasonal variability of the water masses.



**Figure 12:** Position of the float and ASFAR deployments with station numbers. At station 107, in Bight Fracture Zone, 2 ARVOR were deployed.

At the beginning of the cruise, a total of 14 floats (4 PROVOR-CTS3-DO with oxygen sensor, 8 ARVOR for the ASFAR, 2 PROVOR-DEEP) and one new ASFAR were embarked. We also recovered 2 ASFAR and 3 ARVOR floats.

During the cruise, the 4 PROVOR-CTS3-DO floats and the 2 PROVOR-DEEP were deployed in the Subpolar Gyre (see Fig. 12 and Table 4). We also recovered 2 ASFAR (stations 100 and 119) and refit the second one after correcting a problem of burn-wire in the release system. Then we re-deployed 2 ASFAR (one new and one refit) equipped with the 8 new ARVOR at the same position (table 5). The 3 ARVOR floats that could be recovered from the old ASFAR were re-programmed and deployed (Fig. 12, Table 4).

**Table 4 .-** Position of the ARGO float deployments

	SERIAL NUMBER	WMO NUMBER	St.	TIME	LATITUDE	LONGITUDE	SEA STATE	BATHYM.
CTS3 DO	OIN-12-DO-S31-01	6901457	48	05/07/2016 23:54	52°52,54 N	24°38,72 W	moderate	3646m
CTS3 DO	OIN-14-DO-S31-04	6901753	78	12/07/2016 01:30	59°33,64 N	38°18,99W	moderate	3042m
CTS3 DO	OIN-14-DO-S31-05	6901754	72	10/07/2016 23:20	59°09,98 N	34°28,47 W	moderate	2505m
CTS3 DO	OIN-14-DO-S31-06	6901755	62	09/07/2016 3:45	57°57,86 N	29°16,08 W	very rough	2144m
DEEP	OIN-015-ARDP-09	6901760	75	11/07/2016 12:00	59°22,90 N	36°23,64 W	calm	3097m
DEEP	OIN-015-ARDP-11	6901762	75	11/07/2016 12:00	59°22,09 N	36°23,61 W	calm	3097m
ARVOR	OIN-AR14-058	6901719	107	22/07/2016 2:42	56° 43,47 N	33° 35,56 W	rough	2377m
ARVOR	OIN-AR14-059	6901720	107	22/07/2016 2:42	56° 43,47 N	33° 35,56 W	rough	2377m
ARVOR	OIN-AR14-065	6901726	119	23/07/2016 19:50	58° 58,40 N	32° 05,82 W	calm	1710m

**Table 5 .-** Position of the ASFAR deployments after triangulation.

	St.	DEPLOY TIME	LATITUDE	LONGITUDE	BATHYMETRY
ASFAR 03	100	18/07/2016 19:00	58°32,674 N	30°11,235 W	1848m
ASFAR 04	119	23/07/2016 19:30	58°58,269 N	32°05,775W	1707m

**Table 6 .-** Position of the drifting buoys of MetOcean Surface Velocity Program –SVP.

	S/N	IMEI	Latitude	Longitude	Depth	Station	OMM
SVP 1	J07AHZ	300234063738740	59°02,54 N	33°11,52 W	2291m	CTD 70	6401552
SVP 2	J079OB	300234063730820	59°25,65 N	37°02,31 W	3111m	CTD 76	6501557
SVP 3	J07AHV	300234063739800	59°45,45 N	40°54,40 W	2285m	CTD 85	6501556
SVP 4	J07A24	300234063737900	59°48,02 N	42°00,10 W	1734m	CTD 88	6501558
SVP 5	121390	300234063121390	62°06,06 N	26°12,41 W	760m	CTD 132	6401500

The French meteorological office gave us 5 drifting buoys that we deployed in the Subpolar Gyre (Fig. 12, Table 6). The MetOcean Surface Velocity Program (SVP, iSVP) drifting buoy is a Lagrangian current-following drifter, designed to track water currents (15 m depth) beneath the ocean surface. It is equipped with a sea surface temperature sensor and a barometric pressure sensor.

## 6. SAMPLING AND CHEMICAL ANALYSIS

### *Seawater sampling*

A total of 13098 samples were collected during BOCATS cruise from the 28 Niskin bottles attached to the CTD-rosette. The sampling of the different variables followed the strict order given in [Table 1](#). The detailed samples collected by variable in each station and depth are listed in the Table of the [Annex I](#).

### *CFCs (M de la Paz & S. Fdez Bastero).*

CFC samples were taken every other station. The analyses of these samples with respect to the components CFC-11 and CFC-12 will be performed at the gas chromatography lab at the Institute of Environmental Physics, **University of Bremen**, after the cruise. These sea water samples were collected in so called through-flow containers, which consist of a glass ampoule (volume ~ 100 mL) connected to a head carrying a movable central and a fixed side tubing, both made of stainless steel. After flushing with water from the Niskin bottles, the side tubing was closed with a plug. Later on, purified nitrogen was inserted into the side tubing, thereby creating a headspace in the neck-part of the ampoule. This neck part was then flame sealed, and the remaining molten glass pieces were stuck to the ampoules after cooling. In order to determine the CFC concentration, the total weight of the flame sealed ampoules has to be known in addition to their net weight, which has been determined prior to the cruise at the Bremen lab.

Altogether, 504 CFC samples have been taken during the cruise, out of these 17 are double samples. Due to their time dependent input into the ocean, CFCs carry information on the age and the ventilation of water masses. It is also possible to infer the concentration of anthropogenic carbon from the CFC/age data. Special focus of the analyses will be on the different components of North Atlantic Deep Water and Labrador Sea Water and their variability compared to previous cruises.

### *Oxygen (P. Le Bot & P. Branellec).*

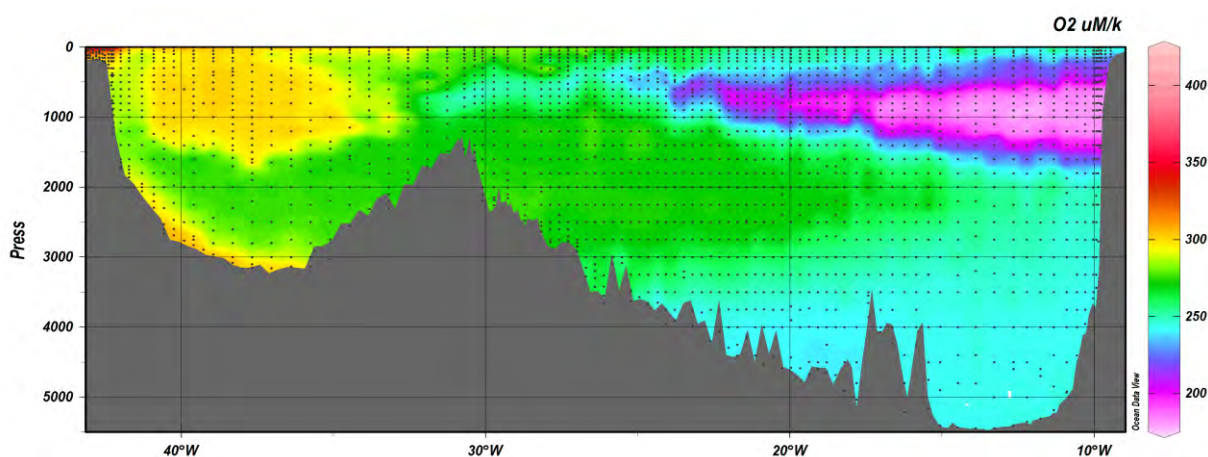
With the main purpose to know the oceanic ventilation and also to estimate the anthropogenic CO<sub>2</sub>, and additionally for calibrating the O<sub>2</sub> sensor of CTD, samples of O<sub>2</sub> were

Table 7: Number of samples collected during BOCATS cruise

Variable	Number of samples
CFC	504
Oxygen	2472
N <sub>2</sub> O/CH <sub>4</sub>	709
pH	2476
C <sub>T</sub>	307
DOC	329
Alkalinity	1010
Nutrients	2502
Salinity	2501
<sup>18</sup> O and <sup>13</sup> C	288

taken in most of the stations at 28 depths. The O<sub>2</sub> samples were analyzed following the widely applied Winkler method. The O<sub>2</sub> samples were always the first in being taken from the Niskin bottles of the rosette or after CFC samples when they were sampled. Samples were collected in calibrated flasks (~120 mL) with a PVC pipe avoiding the bubble formation. Sample fixation (precipitation) were done by adding 0.6 mL of manganous salt (MnCl<sub>2</sub>·4H<sub>2</sub>O) and 0.6 mL of alkali-iodide solution (NaOH + NaI). These samples were stored at darkness at least 12 hours before being measured. Then, 1 mL of sulphuric acid is added to dissolve the precipitate and to titrate the O<sub>2</sub> sample with thiosulfate 0.01N using an automatic 5 mL burette “Titrandro Metrohm”. Taking into account the stoichiometry and the volume of thiosulfate used, O<sub>2</sub> concentration is obtained in  $\mu\text{mol kg}^{-1}$ .

O<sub>2</sub> concentration distribution of OVIDE section is represented using the Ocean Data View program (ODV) (Schlitzer, 2011) in figure 13. This figure is made using the Winkler measurement being different to the [Figure 6](#) that used the data of the O<sub>2</sub> sensor of the CTD



**Figure 13:** O<sub>2</sub> distribution along the OVIDE section using the Winkler measurements.

#### ***N<sub>2</sub>O and CH<sub>4</sub>. (M de la Paz & S. Fdez Bastero).***

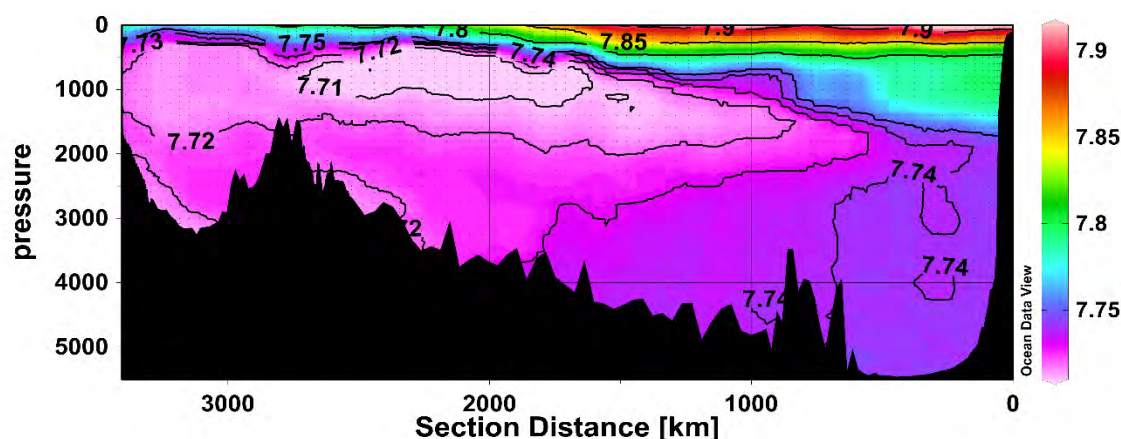
During the BOCATS cruise discrete samples were taken every other station. For each water depth, two replicates were taken from the Niskin bottles after arrival to the deck. Altogether, 709 duplicated samples have been taken during the cruise for N<sub>2</sub>O and CH<sub>4</sub> analysis. The right sampling order (according to solubility of the different gases), should be after the CFC's and oxygen sampling. Samples were taken in 100 mL vials for the simultaneous analysis of N<sub>2</sub>O and CH<sub>4</sub>. Vials are filled using a silicon tube squeezing air bubbles to assure air bubble free sampling. The silicon tube is placed to the bottom of the vial, then leave overflow seawater at least 2 volume and finally close vial with a rubber plug under running water. Close attention is paid when closing the vials avoiding air bubbles trapped in the sample. When all samples for one station are collected, the vials are close with an aluminum capsule using a crimping tool. The samples were poisoned right after sampling one



station using saturated HgCl<sub>2</sub>, and stored upside down for the later analysis after the cruise. The N<sub>2</sub>O and CH<sub>4</sub> concentration will be determined by gas chromatography in the laboratories of the IIM-CSIC following the procedure described in *de la Paz et al.* (2015). Samples will be analyzed with a static equilibration method: A headspace of 20 mL compressed a secondary standard was added to the sample vial and left to equilibrate with the liquid phase for at least 8 hours. Afterwards subsamples were taken from the headspace and injected automatically into the gas chromatographic system. N<sub>2</sub>O and CH<sub>4</sub> are determined simultaneously ECD and FID detector respectively.

#### *pH. (M. García-Ibáñez, E. F. Guallard & X. A. Padín).*

Seawater pH samples were taken at 28 levels in all the stations along the cruise section. pH samples were taken directly from the Niskin bottles into special optical glass spectrophotometric cells of 28 mL and 100 mm of path length. These cells were carefully stored in a thermostatic bath at 25.0°C approximately one hour before the analysis. pH measurements were performed using the spectrophotometric method described in Clayton and Byrne (1993). This method consists of adding 75 µL of m-cresol purple to the seawater sample and measuring its absorbance at 3 wavelengths, i.e.,  $\lambda_{HI}=434$  nm;  $\lambda_I=578$  nm and  $\lambda_{non-abs}=730$  nm. The reaction of interest at seawater pH is the second dissociation  $HI^-_{(aq)}=H^+_{(aq)}+I^{2-}_{(aq)}$  in which I is the indicator. Then, the total hydrogen ion concentration can be determined by  $pH=pK_2+\log_{10}[I^{2-}]/[HI^-]$ . Absorbance measurements were performed with a Perkin Elmer Lambda 859 UV/VIS spectrometer. pH values were calculated following the equations described in Dickson *et al.* (2007), who include a correction due to the difference between seawater and the indicator acidity ( $\Delta R$ ).



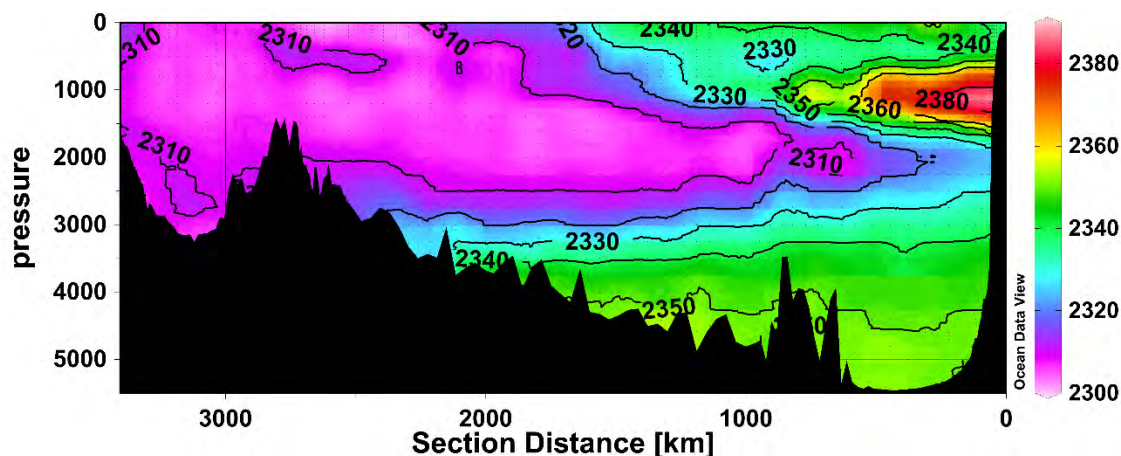
**Figure 14:** Vertical distribution of  $pH_{T25}$  along the BOCATS section.

The preliminary pH results of the BOCATS section on the total scale and 25°C ( $pH_{T25}$ ) were plotted using ODV (Schlitzer, 2011), as it is shown in figure.14. The minimum of  $pH_{T25}$  is associated to the layer of low oxygen. The upper layer has higher pH because of the

biological CO<sub>2</sub> fixation. The Mediterranean Water also shows a relative pH maximum at 1000 dbar close to Iberian Peninsula. In the Irminger Sea, the low pH of Denmark Strait Overflow Water is associated with the high content of anthropogenic CO<sub>2</sub>.

*Total alkalinity ( $A_T$ ) (M. García-Ibáñez, E. F. Guallard & X. A. Padín).*

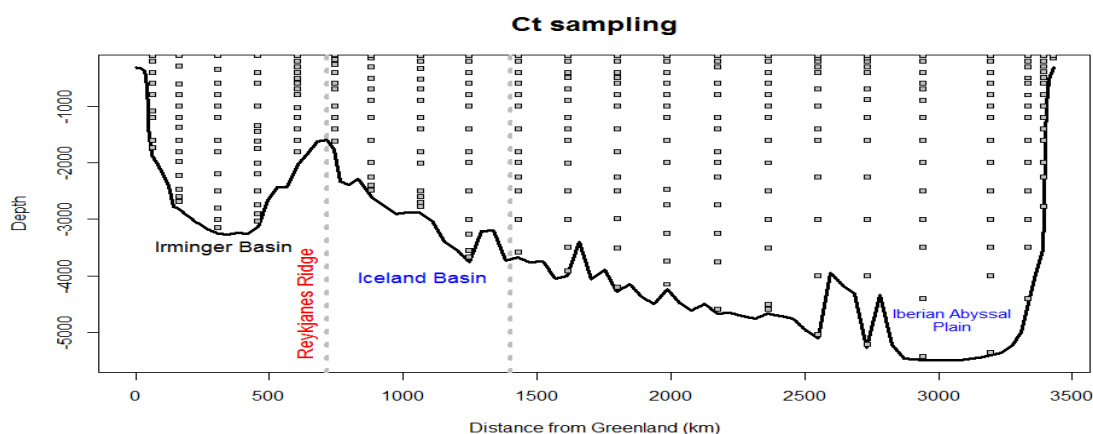
Samples of  $A_T$  were taken in 64 stations along the cruise section, almost half of the total stations. Clean borosilicate glass bottles (600 mL) were rinsed and filled from the bottom using a silicon tube, overflowing half a volume. Samples were stored before the on board analyses. Measurements of  $A_T$  were done by a one endpoint method using an automatic potentiometric titrator (Dosino 800 Metrohm) with a combined glass electrode (Perez and Fraga, 1987). A Knudsen pipette (~185 mL) was used to transfer the samples into an open Erlenmeyer flask in which the potentiometric titration was carried out with HCl (0.1 M). The final volume of titration was determined by means of two pH reading after the endpoint of 4.45 is reached (Mintrop et al., 2000). These  $A_T$  measurements were done in 13 sets of analysis. In order to estimate the accuracy of the  $A_T$  method, measurements of certified reference material (CRM) of CO<sub>2</sub> from batches 135 and 155 provided by Dr. Andrew Dickson were analyzed. In addition, an extra calibration (substandard) was made by using a closed container of 75 L filled with open ocean surface water.



**Figure 15:** Vertical distribution of  $A_T$  distribution along the BOCATS section

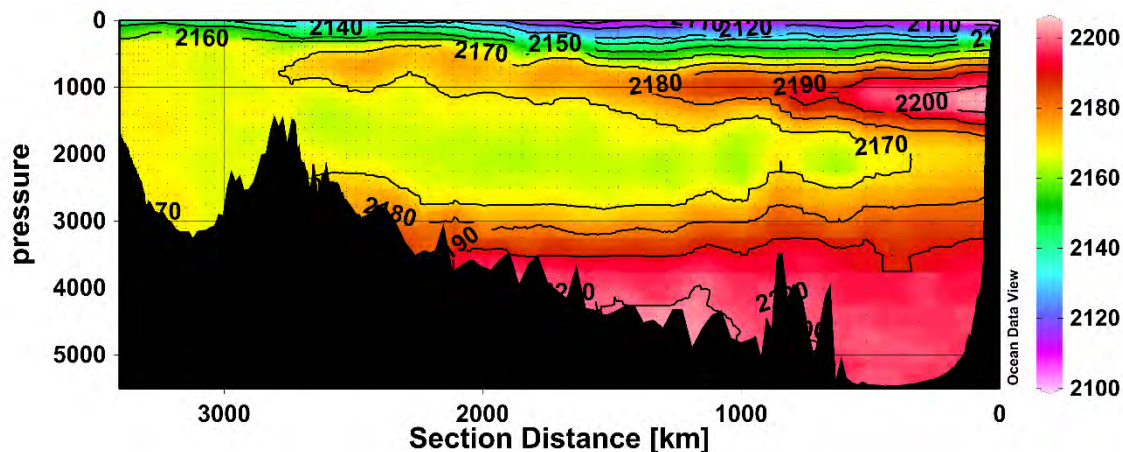
The distribution of  $A_T$  concentrations in  $\mu\text{mol}\cdot\text{kg}^{-1}$  along the BOCATS cruise is shown in the Figure 15. Note that the plot accounts for measured and interpolated data (30%). The maximums at the upper layer toward the east and at 1000 close to the Iberian Peninsula are associated to the high saline waters. However, the maximum in deep waters is due to the advection of Antarctic waters with high  $A_T$  concentrations. The water formed in the subpolar gyre has low and very homogenous  $A_T$  concentrations (2310-2315  $\mu\text{mol}\cdot\text{kg}^{-1}$ ).

During the cruise a total of 307 samples of  $C_T$  were taken (Figure 16). Samples of  $C_T$  were collected in 5-15 levels in 29 stations in order to check  $C_T$  computed from pH and  $A_T$  measurements. Usually, fifteen levels were sampled each four stations. Amber vials (100 ml) were rinsed and filled from the bottom using a silicon tube, overflowing half a volume, avoiding bubble generation directly from the Niskin bottles. Samples had been poisoned with mercury ( $HgCl_2$ ) and storage at a cool dark-isolated place. A headspace of 1% of the bottle volume is left. Then, a saturated aqueous solution of mercuric chloride (75  $\mu$ L) was added to the samples as a preservative of fouling formation. Afterwards the bottles were closed with an aluminum capsule using a crimping tool, and stored in a cool dark-isolated place. These samples will be analyzed in the laboratories of IIM-CSIC in Vigo (Spain) using an AIRICA equipment. The analysis consists on acidifying an aliquot of 2 mL with  $H_3PO_4$  in a glass stripping chamber. Then, the resulting  $CO_2$  gas is carried in the equipment by a free- $CO_2$  gas ( $N_2$ ) into a non-dispersive infrared gas analyzer (LICOR 6262). Certified Reference Material of  $CO_2$  analyses were performed in order to control the accuracy of  $C_T$  measurements.



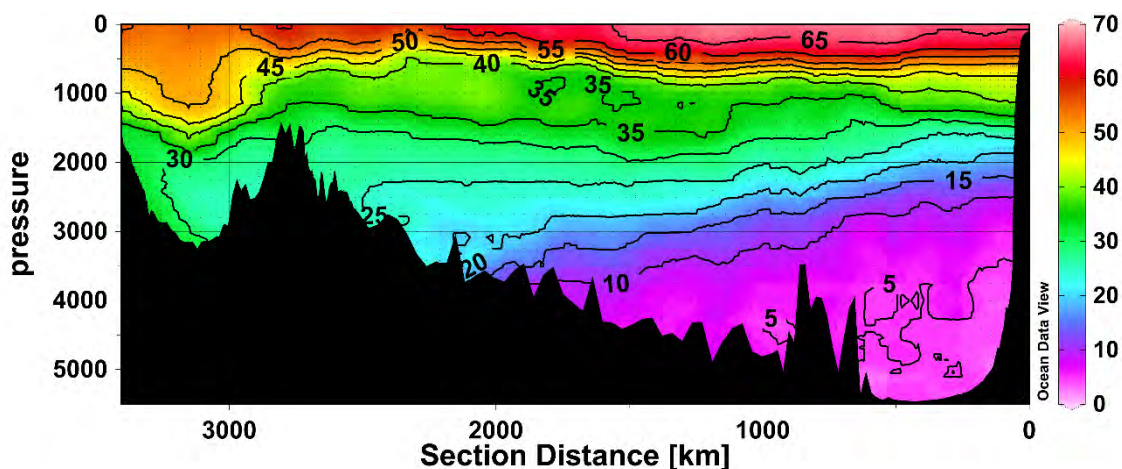
**Figure 16:** Total inorganic carbon ( $C_T$ ) sampling: relative positions of the samples in the water column. Main basins are indicated.

The  $C_T$  was also computed from pH and  $A_T$  using the thermodynamic constants determined by Mehrbach et al. (1973) and refitted by Dickson and Millero (1987). The  $C_T$  distribution along the BOCATS section is show in the Figure 17. The  $C_T$  distribution follows the same pattern than the  $A_T$  distribution, except in the upper layer where the biological  $CO_2$  fixation decreases the  $C_T$  concentrations.



**Figure 17:** Vertical distribution of  $C_T$  distribution along the BOCATS section

The first estimation of anthropogenic  $\text{CO}_2$  ( $C_{\text{ant}}$ ) was performed using the phi-method (Vazquez-Rodríguez et al., 2009, Perez et al. 2008; Rios et al. 2010), which is a back-calculation technique. The distribution of  $C_{\text{ant}}$  along the main section is shown in Figure 18. High values of  $C_{\text{ant}}$  are detected in the thermocline showing a general decrease toward the bottom. Deep waters in the Iberian Basin show very low values. In the Irminger Sea, the thick layer of Labrador Sea Water contains high values of  $C_{\text{ant}}$ , as well as the thin layer of Denmark Strait Overflow Water just in the bottom.



**Figure 18:** Vertical distribution of  $C_{\text{ant}}$  distribution along the BOCATS section.

#### Nutrients (*F. Alonso-Pérez & M. Fontela*)

Dissolved nutrients were sampled after tracer gases, dissolved oxygen, total inorganic carbon, pH and alkalinity. Samples were withdrawn to 30 mL solid-polyethylene containers after rinsing twice with the same water. Samples were preserved in the dark at 4°C when analyses started more than one hour after collection, and they were analyzed no more than 12 hours after collection. Nutrient analyses were performed with a SKALAR segmented flow auto-analyzer.

Nitrate+nitrite, phosphate and silicate were simultaneously determined. Determination procedure was settled as a pumping cycle of 120 seconds sucking the sample and 80 seconds sucking from a milli Q water reservoir. Every analysis spent ~8 mL of sample. Determinations of nitrate, phosphate and silicate were carried out following methods described by Hansen and Grasso (1983) with some improvements (Mouriño and Fraga, 1985).

*Calibration.* Primary standards for nitrate+nitrite, phosphate and silicate were performed from nutrient salt materials ( $\text{KNO}_3$ ,  $\text{KH}_2\text{PO}_4$  and  $\text{Na}_2\text{SiF}_6$ , respectively) dried 24 hours over silica gel prior to weigh. Primary solutions were performed with milli Q in calibrated volumetric flasks. A stock standard solution was prepared by mixing the three primary standards and preserved in the dark at 4 °C. Daily working standard solutions were produced dissolving different volumes of stock standard solution in low nutrient seawater (LNSW), filtered through 0.2  $\mu\text{m}$ . These solutions were prepared every two days and preserved in the dark at 4 °C. Concentrations of each nutrient in the working standard solution are showed in Table 8.

**Table 8.-** Working calibration standards

STD	Volume (mL)		Concentration ( $\mu\text{mol l}^{-1}$ )			
	Stock STD	Final Volume	$\text{NO}_3^-$	$\text{NO}_2^-$	$\text{HPO}_4^{2-}$	$\text{SiO}_2$
1	1	500	7.960		0.532	16.307
2	2	500	15.920		1.065	32.613
3	3	500	23.880		1.597	48.920
4	3	500		23.895		

**Table 9:** Nutrient concentrations  $\pm$  standard deviation for Low Nutrient Sea Waters and North East Atlantic Deep Water Lower.

	Concentration ( $\mu\text{mol l}^{-1}$ )		
	$\text{NO}_3^-$	$\text{HPO}_4^{2-}$	$\text{SiO}_2$
LNSW	$0.02 \pm 0.08$	$0.00 \pm 0.03$	$0.57 \pm 0.05$
NEADWL	$22.58 \pm 0.22$	$1.44 \pm 0.02$	$46.77 \pm 1.20$

A LNSW set was used for the whole the cruise. Nutrient concentrations of these LNSWs are showed in table 9. At station 12, water deeper than 4000 m, corresponding to North East Atlantic Deep Water Lower waters (NEADWL) was collected and filtered through 0.2  $\mu\text{m}$  in order to have a high nutrient standard. NEADWL standard was since then measured every day of analysis; its nutrient concentration is showed in table 8. Regarding linearity, the analytical system of nitrate showed a linear response over the working range.

*Precision.* The WOCE requirements for precision (Joyce et al., 1991) are silicate 0.2 % full scale ( $150 \mu\text{mol kg}^{-1}$ ) nitrate 0.2 % full scale ( $40 \mu\text{mol kg}^{-1}$ ) and phosphate 0.4% full scale ( $2.5 \mu\text{mol kg}^{-1}$ ).



*Sampling error and duplicate samples.* In order to test sampling error, 32 pairs of bottles were fired at the same depth at different stations. Absolute differences average between samples pairs are showed in table 10. Silicate and phosphate errors are within the WOCE requirements. However, these errors are slightly higher in the case of nitrate.

**Table 10.-** Summary of differences between samples fired at the same depth

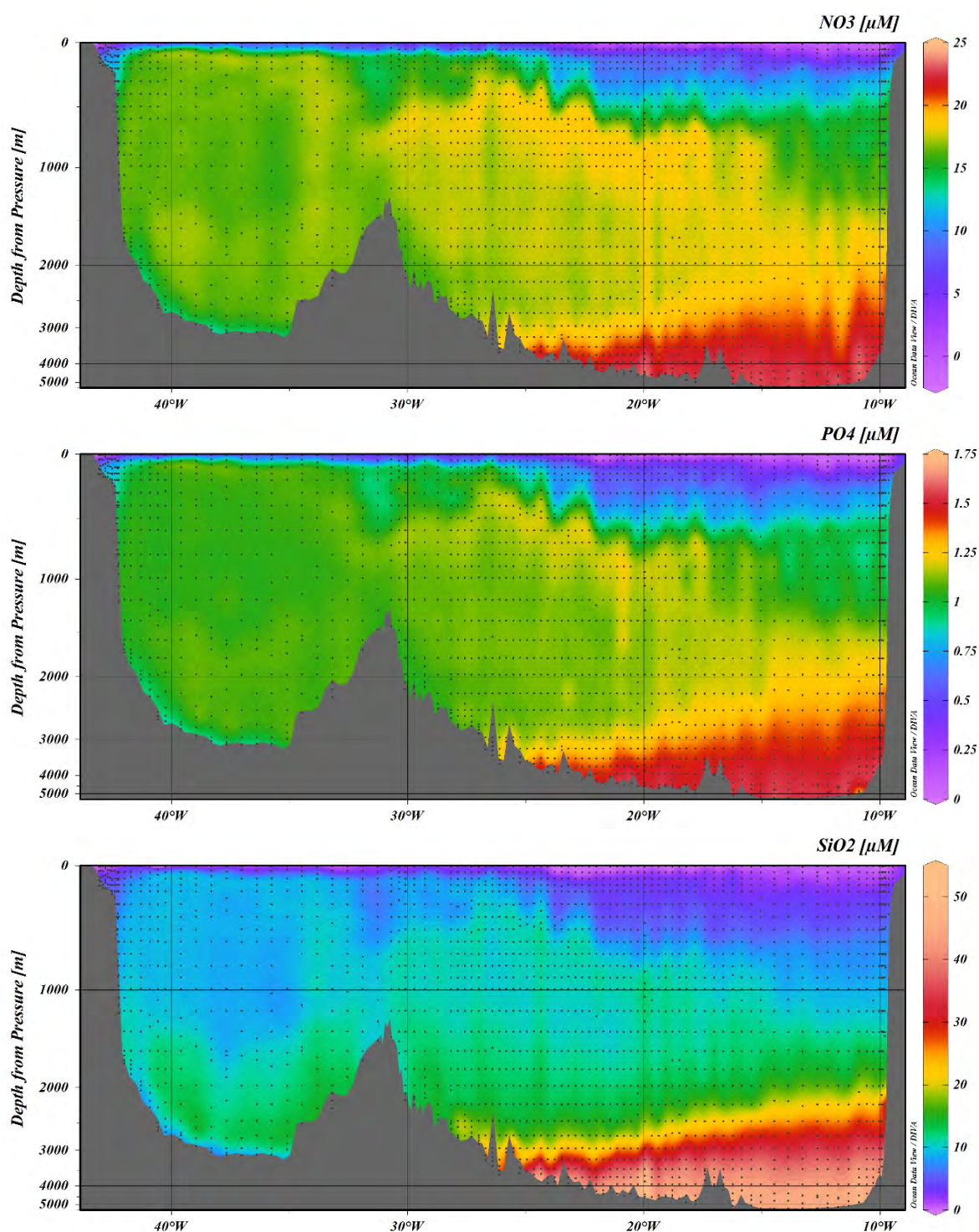
	<b>Nitrate</b>	<b>Phosphate</b>	<b>Silicate</b>
<b>Absolute differences</b>	0.12	0.006	0.12
<b>C.V.fs (%)</b>	0.29	0.23	0.08
<b>WOCE requirements</b>	0.20	0.40	0.20

*Consistency of measurements. Quality control.* At station 0, the 28 oceanographic Niskin bottles were fired at the same depth, 4854 m. Results are showed in table 11, standard deviation was 0.23 for nitrate, 0.01 for phosphate and 0.26 for silicate. Standard deviations referred to full scale were lower than WOCE requirements in the case of silicate and phosphate and 0.25 % higher for nitrate.

**Table 11.-** Summary of differences between quality control measurements

	<b>Average</b>	<b>S.D.</b>	<b>C.V. fs (%)</b>
<b>Nitrate</b>	23.06	0.23	0.45
<b>Phosphate</b>	1.30	0.01	0.24
<b>Silicate</b>	47.77	0.26	0.17

*Preliminary results.* The vertical distributions in the concentrations of nitrate, phosphate and silicate for the Ovide section are showed in Figure 19.

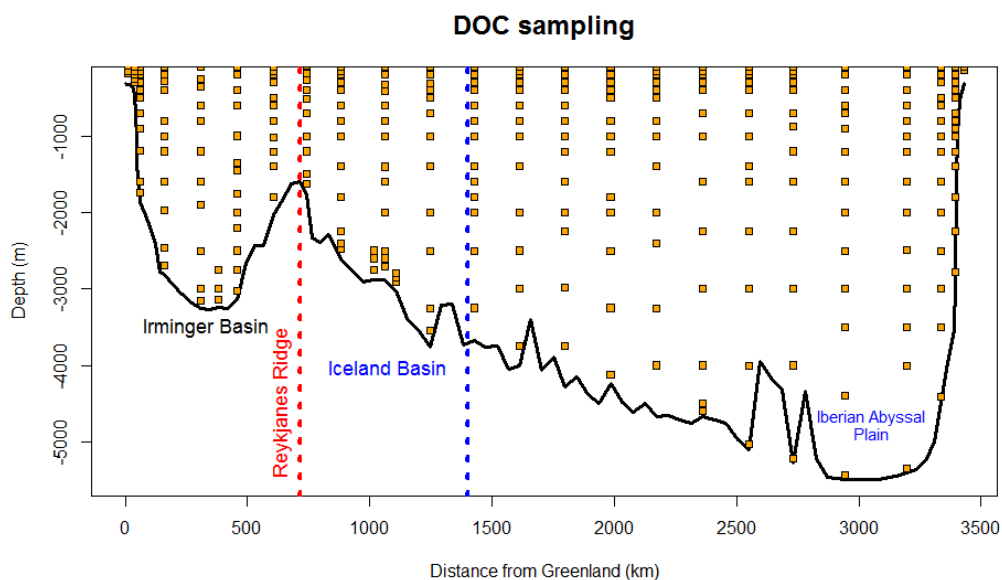


**Figure 19:** Vertical distribution of nitrate, phosphate and silicate ( $\mu\text{mol kg}^{-1}$ ) along the section OVIDE.

#### *Dissolved Organic Carbon sampling (M.J. Álvarez, V. Pelayo & M. Fontela)*

Sampling planning for dissolved organic carbon (DOC) was similar to total inorganic carbon ( $C_T$ ). A station each four was sampled at fifteen levels approx. The sample distribution is surface-intensified (Fig. 20). At some points extra bottoms samples were taken to characterize specific watermasses. Previously clean amber vials (20 mL) with polypropylene caps were

rinsed and filled with the sample. Immediately, has been acid-leached with phosphoric acid ( $\text{H}_3\text{PO}_4$ ) and stored in a fridge (3-4°C). There are replicates for all the points, to compensate possible contamination events. A total of 329 samples are going to be measured on land during August-September 2016 using an IRGA Shimadzu TOC5000 analyzer. The measurement accuracy will be tested with certified reference materials provided by Dr. Hansell (University of Miami).



**Figure 20:** DOC sampling. Relative positions of the samples in the water column. Main basins are indicated.

#### *Isotopes $\delta^{18}\text{O}/\delta\text{D}$ sampling (M.J. Álvarez, V. Pelayo, M. Fontela)*

At some discrete points, isotopes samples were collected. It is an international collaboration with Dr. Voelker of Instituto Português do Mar e da Atmosfera (IPMA- Divisão de Geologia e Georecursos Marinhos) and Dr. Reverdin of Laboratoire d’Océanographie et du Climat of Institut Pierre-Simon-Laplace (LOCEAN-IPSL). Although slightly similar, methodologies differ: 10 mL glass transparent flasks closed by crimped for the IPMA; and amber vials with cap for LOCEAN. Both were first rinsed and then filled with the sample avoiding bubble formation. A total of 208 samples were taken (see [sampling table](#) in [Annex I](#)).

## 7. UNDERWAY MEASUREMENTS (*A. Padín*)

The underway measurements of sea-surface and atmospheric molar fractions of CO<sub>2</sub> (xCO<sub>2</sub>sw and xCO<sub>2</sub>atm, respectively) along the BOCATS track were performed with model 8050 pCO<sub>2</sub> measuring system of General Oceanics whose design and mode of operation was designed pCO<sub>2</sub> experts. The analytical principle is based on the equilibration of atmospheric air with the seawater sample under analysis. The system is compact and operates by directing seawater flow through a chamber (the equilibrator) at a rate of 2 L min<sup>-1</sup> where the CO<sub>2</sub> contained in the water equilibrates with the gas present in the chamber (the headspace gas).

The analyzer used to measure the CO<sub>2</sub> in the sample gas stream is the non-dispersive infrared analyzer LI-7000 built by LICOR. The CO<sub>2</sub> measurements are corrected for the dilution by water vapor and band-broadening pressure effect by the firmware internal to the analyzer such that they report a dry mole fraction. The LICOR was calibrated regularly by measuring a set of four standards at regular intervals with concentrations that covered the range encountered in the working area, namely, 0, 205, 381 and 504 ppm. A typical analytical cycle in which all measurements were taken at a 1-min frequency consisted of a calibration phase, which involved three measurements of each of the four gas standards. Immediately after calibration, atmospheric air measurements were made as a set of 5 analyses following 100 seawater equilibrated sample measurements. Moreover, other sensors are included in the system for analytical and control quality purposes as a stable Harts digital thermometer with a thermistor probe to measure the temperature of the seawater in the equilibrator and several barometers to monitor pressure inside the equilibrator. Pressure is also monitored inside the equilibrator and inside the analyzer.

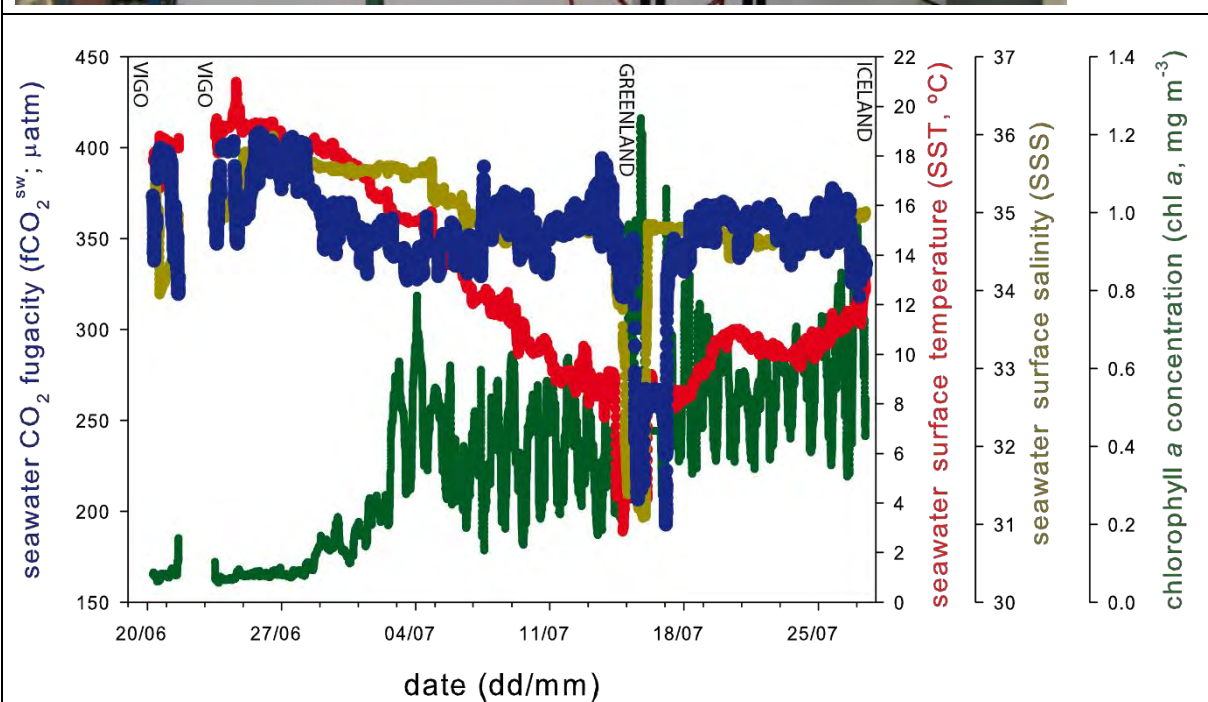
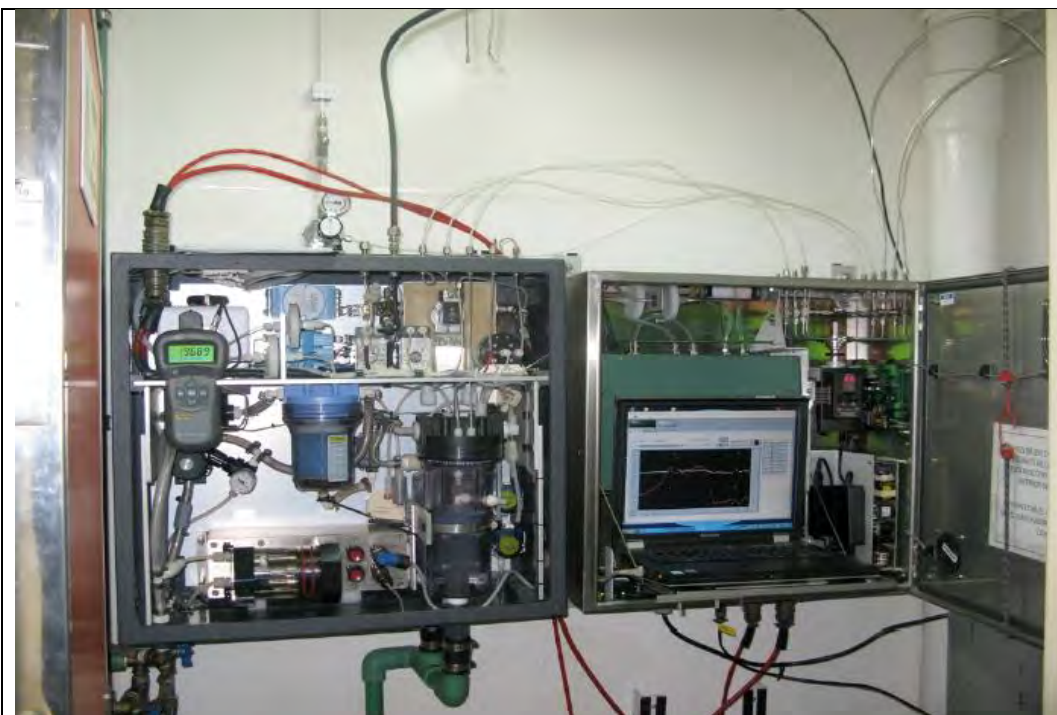
A thermosalinograph (Sea-Bird SEACAT SBE21) was connected to the same uncontaminated seawater supply. This apparatus recorded underway surface temperature (SST) and salinity (SSS) during the BOCATS cruises.

The air-sea CO<sub>2</sub> flux (FCO<sub>2</sub>; mol m<sup>-2</sup> yr<sup>-1</sup>) was calculated according to:

$$FCO_2 = S k \Delta fCO_2$$

where “S” stands for the solubility of CO<sub>2</sub> in seawater (Weiss et al., 1974), “k” is the CO<sub>2</sub> transfer velocity (Wanninkhof, 1992) computed using 6-hour wind speed (WS) data obtained from the the cross-calibrated multiplatform (CCMP) winds (Atlas et al., 2011) provided at 6 h time intervals and 0.25° resolution. The calculation of fCO<sub>2</sub>sw and fCO<sub>2</sub>atm from the raw xCO<sub>2</sub> data were computed following the methods and equations described by Pierrot et al. (2009).





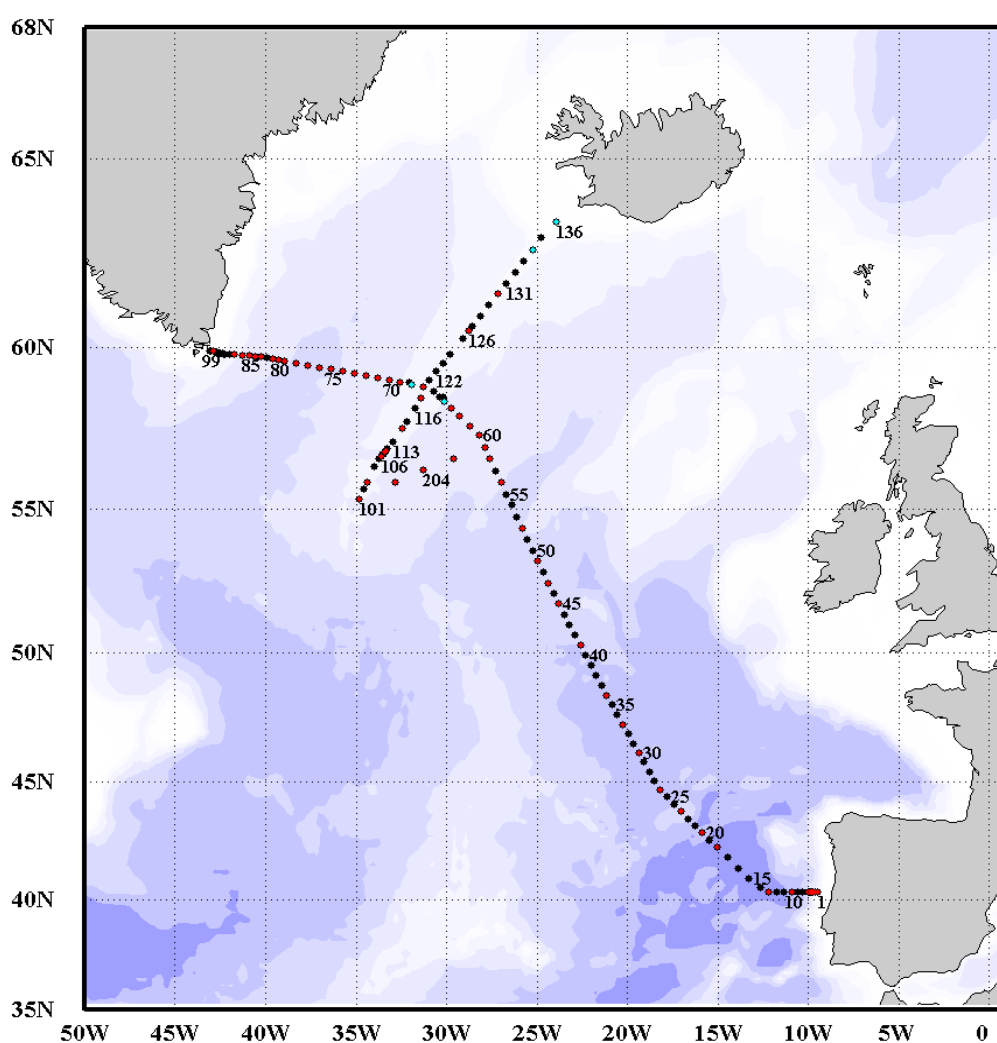
**Figure 21:** (a) GO pcO<sub>2</sub> system and pCO<sub>2</sub> observation along the cruise track or OVIDE line (b) Values of seawater CO<sub>2</sub> fugacity, temperature, salinity and chlorophyll concentration at surface seawater as measured along BOCATS cruise.

A buoy MLI for Sea Surface Temperature measurements was deployed during the test station for checking purposes.



## 8. SEDIMENTS SAMPLING (*G. Francés, I. Alejo, M<sup>a</sup> J. Álvarez & V. Pelayo*)

Analyses of the recent sedimentary record are mainly addressed to quantify the  $\text{CaCO}_3$  (as the result of biogenic production and preservation) and the TOC (total organic carbon) content, as well the grain-size of sediments during the last centuries. These data will be correlated with chemical data of the water column and bottom currents velocities measured during the cruise in the same stations with the LADCP. Establishing fluctuations of aforementioned variables along the preindustrial and industrial times enables to detect changes related with natural and anthropogenic  $\text{CO}_2$  concentrations and the AMOC (Atlantic Meridional Overturning Circulation) at centennial time scales and their effects on the production and preservation of  $\text{CaCO}_3$  in the North Atlantic.

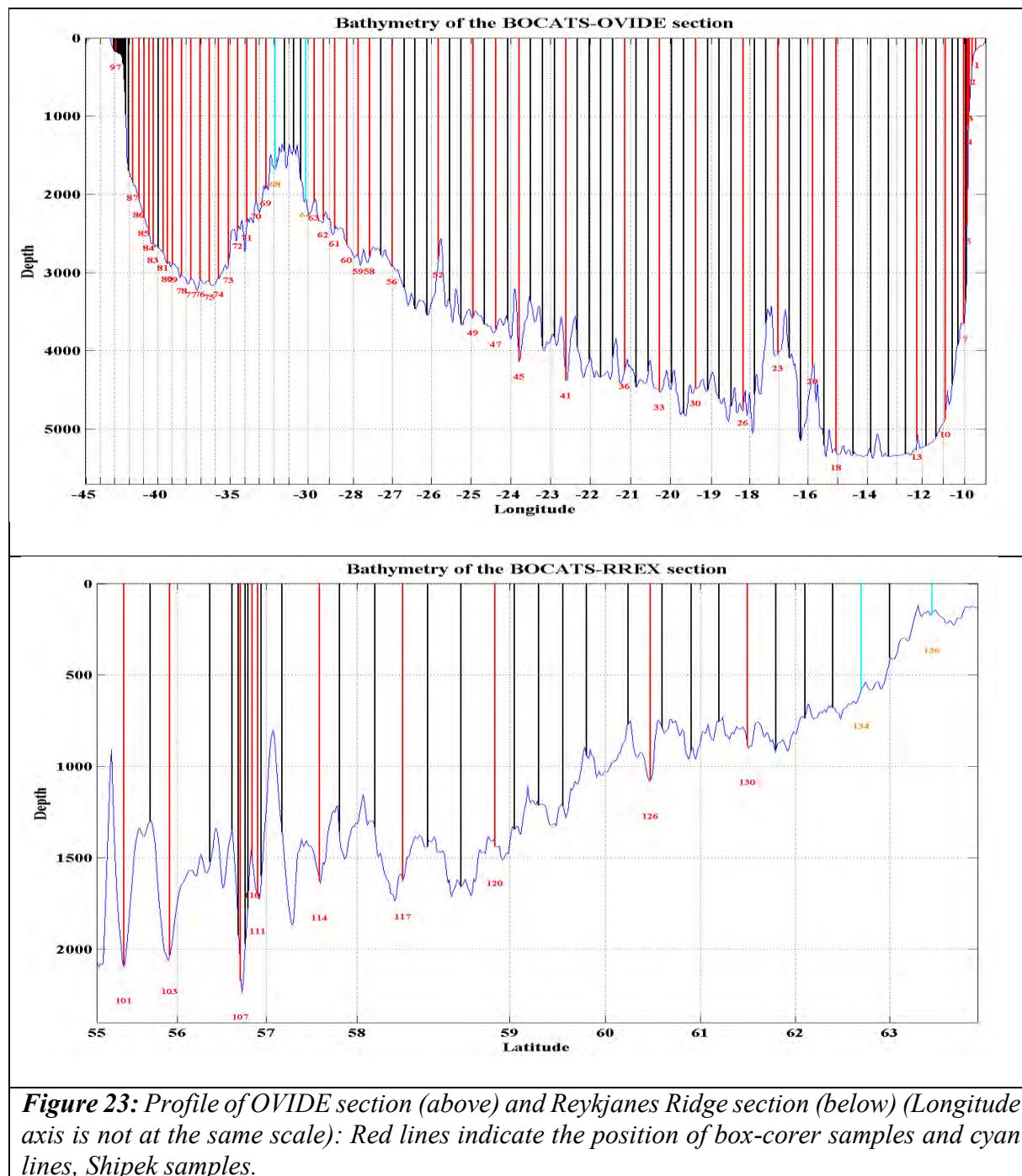


**Figure 22:** Map of stations: Red dots: Box-corer samples; Green dots: Shipek samples.

### *Objectives*

Sediments recovery during BOCATS cruise aims to retrieve surface sedimentary samples from the bottom of the North Atlantic from the Iberian Margin to the Irminger Basin and along the Reykjanes Ridge (from 55°N to Iceland continental shelf). The shallowest sample

has been retrieved at 142 m depth (Iceland continental shelf) and the deepest sample at 5267 m depth (Iberian Abyssal Plain). Most of the samples were obtained at around 2000-4000 m depth in basins currently bathed by different components of the North Atlantic Deep Water (NADW), as the Labrador Sea Water (LSW), Denmark Strait Overflow Water (DSOW) Iceland-Scotland Overflow Water (ISOW) and North-East Atlantic Deep Water (NEADW). The map of box corer and Shipped sampling is given in Fig. 22. More details about bathymetry are given in Fig. 23.



A list of prospected stations appears in the Table 12.

**Table 12:** Summary of prospected sediment station.

<b>BOTTOM SEDIMENT SAMPLES</b>				
<b>IBERIAN MARGIN</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
01	BOX-CORER	40.3332	-9.4642	154.7
02	BOX-CORER	40.3345	-9.6432	383.1
03	BOX-CORER	40.3341	-9.7680	814.4
04	BOX-CORER	40.3341	-9.8051	1359.0
05	BOX-CORER	40.3345	-9.8785	2648.9
07	BOX-CORER	40.3340	-10.0340	3524.0
<b>IBERIAN ABISAL PLAIN</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
10	BOX-CORER	40.3343	-10.9050	4817.0
13	BOX-CORER	40.3340	-12.2210	5217.0
18	BOX-CORER	42.2803	-15.0626	5266.9
20	BOX-CORER	42.8849	-15.8517	4179.9
23	BOX-CORER	43.7744	-17.0290	4005.6
<b>WEST EUROPE BASIN</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
26	BOX-CORER	44.6738	-18.2106	4823.0
30	BOX-CORER	46.1691	-19.3763	4607.8
33	BOX-CORER	47.2911	-20.2635	4517.0
36	BOX-CORER	48.4099	-21.1408	4339.0
41	BOX-CORER	50.2823	-22.6084	4141.0
45	BOX-CORER	51.7706	-23.7849	3857.9
<b>ICELAND BASIN</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
47	BOX-CORER	52.5189	-24.3584	3616.9
49	BOX-CORER	53.2653	-24.9480	3543.0
52	BOX-CORER	54.3880	-25.8308	3078.0
56	BOX-CORER	55.8830	-26.9983	2921.3
58	BOX-CORER	56.6310	-27.5884	2748.5
59	BOX-CORER	57.0126	-27.8810	2789.0
60	BOX-CORER	57.3798	-28.1710	2637.6
61	BOX-CORER	57.6740	-28.7225	2487.0
62	BOX-CORER	57.9690	-29.2797	2151.0
63	BOX-CORER	58.2085	-29.7264	2255.7
64	SHIPEK	58.4105	-30.1040	2179.9
64	BOX-CORER	58.4110	-30.1028	2164.8
202	BOX-CORER	56.6565	-29.6427	2770.5
204	BOX-CORER	56.2755	-31.2935	2434.5
206	BOX-CORER	55.9125	-32.8110	2222.5

**Table 12:** Continuation.

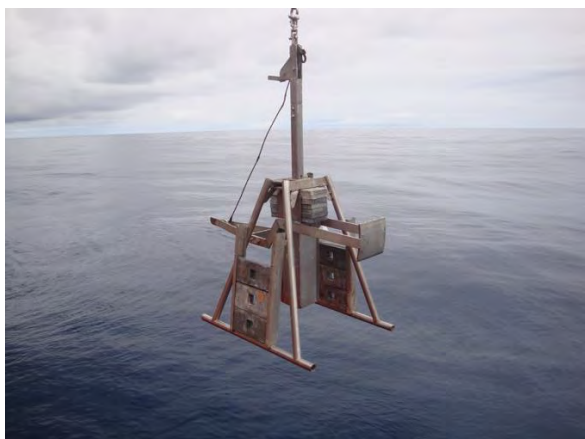
<b>IRMINGER BASIN</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
68	BOX-CORER	58.9097	-31.9117	1698.7
68X	SHIPEK	58.9726	-32.1771	1455.0
69	BOX-CORER	58.9749	-32.5560	1888.5
70	BOX-CORER	59.0412	-33.1928	2294.3
71	BOX-CORER	59.1010	-33.8341	2298.0
72	BOX-CORER	59.1662	-34.4763	2508.2
73	BOX-CORER	59.2330	-35.1142	3000.0
74	BOX-CORER	59.2991	-35.7629	3104.0
75	BOX-CORER	59.3628	-36.3990	3101.0
76	BOX-CORER	59.4275	-37.0401	3122.0
77	BOX-CORER	59.4911	-37.6859	3118.5
78	BOX-CORER	59.5584	-38.3167	3048.3
79	BOX-CORER	59.6246	-38.9599	2935.0
80	BOX-CORER	59.6548	-39.2794	2869.5
81	BOX-CORER	59.6849	-39.6000	2789.0
83	BOX-CORER	59.7245	-40.2527	2667.5
84	BOX-CORER	59.7395	-40.5783	2629.0
85	BOX-CORER	59.7563	-40.9074	2286.7
86	BOX-CORER	59.7730	-41.2932	2053.1
87	BOX-CORER	59.7979	-41.7261	1861.6
97	SHIPEK	59.8912	-42.9078	186.0
<b>REYKJANES RIDGE</b>				
<b>Station</b>	<b>Sample method</b>	<b>latitude</b>	<b>longitude</b>	<b>Depth (m)</b>
101	BOX-CORER	55.3489	-34.8138	2180.4
103	BOX-CORER	55.9075	-34.3939	1856.5
107	BOX-CORER	55.7250	-33.5941	2395.0
110	BOX-CORER	56.8505	-33.4335	1916.4
111	BOX-CORER	56.9098	-33.3547	1945.0
114	BOX-CORER	57.5777	-32.4777	1737.0
117	BOX-CORER	58.5304	-31.4223	1655.8
120	SHIPEK	58.8454	-31.2689	1394.4
120b	BOX-CORER	58.8454	-31.2689	1400.0
126	BOX-CORER	60.4698	-28.7782	1265.3
130	SHIPEK	61.4988	-27.1755	716.6
134	SHIPEK	62.6999	-25.2371	618.2
136	SHIPEK	63.4165	-23.9171	142.6

*Fieldwork*

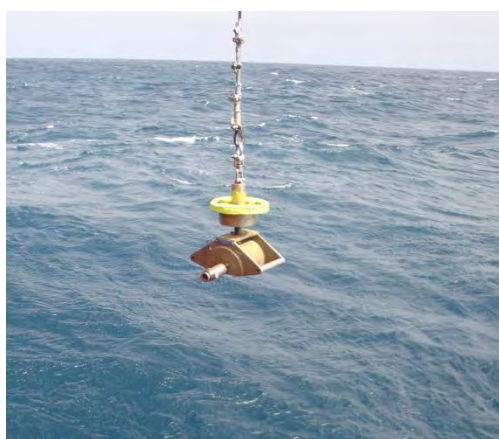
Most of sedimentary samples have been obtained by means of a box-corer. Only when topographical and/or tectonic and sedimentary context of the sites suggested the presence of rocks, a Shipek dredge has been employed. In these cases, when the Shipek recovered sediments, the box-corer was also used. Recovered box core was sub-sampled using 4 PVC tubes (foraminifera, sedimentology, geochemistry and chronology). Two tubes were sampled every 1 cm. Foraminifera samples (first tube) was stained with Rose of Bengal to distinguish alive and dead specimens. 1-cm samples from second tube were stored in plastic bags properly labelled



(see later, samples nomenclature).



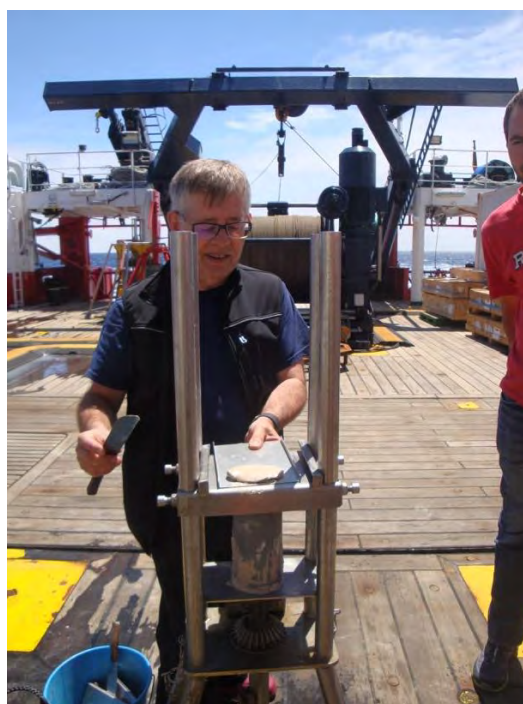
**Figure 24a:** Box-corer dredge



**Figure 24b:** Shipek dredge



**Figure 25a:** Obtaining PVC tubes



**Figure 25b:** Tube subsampling



**Figure 25c:** 1 cm thick subsample



**Figure 25d:** Sample stain, stored and labelled

The third tube of selected samples representative from each prospected basin (Iberia Abyssal Plain, West Europe Basin, Iceland Basin and Irminger Basin) has been subsampled



every 0,5 cm from 0 to 10 cm, and every 1 cm from 11 cm to the bottom for chronological analyses of Pb and Cs. Third tube of non-selected samples and the fourth tube of all the samples were properly labelled and cold stored as archive.

Samples have been labelled according the following protocol:


The abbreviation BOC16 denotes the name of the cruise. The next two letters refer to the used dredge, being BC: Box-corer and SH Shipek. The last two/three numbers designate the Station, from 01 to 97 for the OVIDE section and 101-136 for the Reykjanes Ridge section. Samples numbered as 202, 204 and 206 were retrieved along the section from Station 59 (Iceland Basin) to Station 101 (start of Reykjanes Ridge section).

Subsamples (1 cm thick as general case) from box-cores are identified also by their basal centimeter, counting from the top to the bottom.

Archive tubes include the complete name of the station (e.g. BOC16-BC##) and an arrow which head always point at the core-top.

In every station a form including relevant data has been filled out. An electronic and an analogic copy of all the forms have been stored.

Pictures from bulk sample have been obtained in every station. Also a visual description as well as a short characterization of sand fraction of surface sediment using binocular microscope have been performed.

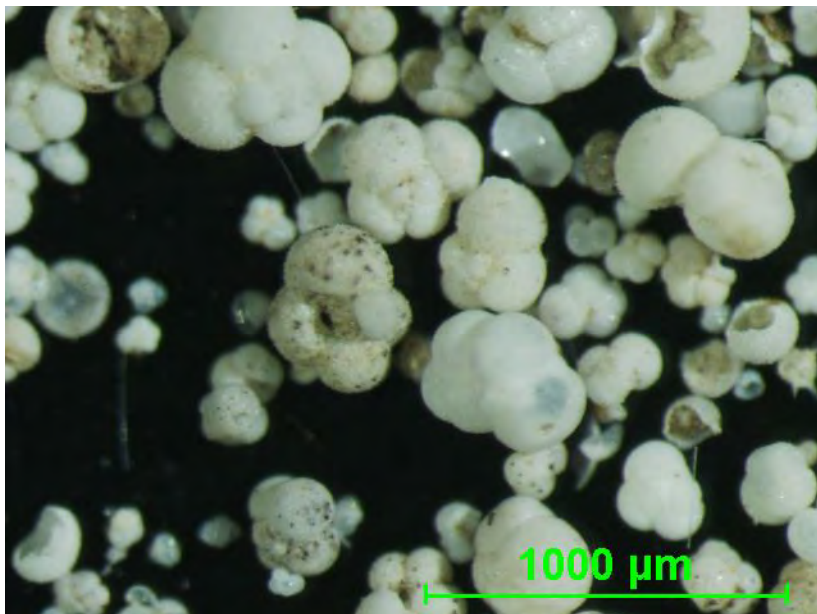
		<b>BOCATS BC</b>	
<b>BOX CORER</b>		<b>Día</b>	<b>Mes</b>
		<b>Año</b>	
		<b>Fecha:</b>	2016
		<b>Hora GMT (llegada a estación)</b>	
<b>NOMBRE ESTACIÓN</b>		<b>Nº ESTACIÓN</b>	
<b>BOC16</b>	<b>BC-</b>		
<b>Anotador</b>			
<b>MUESTREO</b>			
<b>Penetración (cm)</b>			
<b>Nombre</b>	<b>Nº Est</b>	<b>cm</b>	<b>A B C D</b>
BOC16-BC-		1	
BOC16-BC-		2	
BOC16-BC-		3	
BOC16-BC-		4	
BOC16-BC-		5	
BOC16-BC-		6	
BOC16-BC-		7	
BOC16-BC-		8	
BOC16-BC-		9	
BOC16-BC-		10	
BOC16-BC-		11	
BOC16-BC-		12	
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BOC16-BC-		33	
BOC16-BC-		34	
BOC16-BC-		35	
BOC16-BC-		36	
BOC16-BC-		37	
BOC16-BC-		38	
BOC16-BC-		39	

<b>INICIO DE MANIOBRA:</b>		<b>HORA (GMT):</b>	
<b>FONDO:</b>		<b>PROF. (m):</b>	
<b>CABLE LARGADO (m):</b>		<b>HORA (GMT):</b>	
<b>Latitud:</b>		<b>°</b>	
<b>Longitud:</b>		<b>°</b>	
<b>DRAGA A BORDO:</b>		<b>HORA (GMT):</b>	
A=TEÑIDO	B=MUESTR	C=XRF/SCL	D= DATA.
<b>DESCRIPCIÓN</b>			
<b>OBSERVACIONES</b>			

Figure 26: Form for box-corer samples.



**Figure 27:** *Picture of the sediment recovered by the box-corer*



**Figure 28:** *Picture obtained with binocular microscope of sand fraction.*

## 9. OUTREACH

During the cruise an important activity in the media was done. Several appearances in the newspapers and electronic journal was occurred (Faro de Vigo, DUVI...). The same day of departure two reports in the Galician TV and in SER broadcasting station were appeared. In addition, four talks for the crew and the scientific cruise was developed to divulgate the scientific objective of the BOCATS project. Finally a strong work with 13 issues was done using the blog GCIENCIA (<http://www.gciencia.com/>) in the section "Bitacoras" (<http://www.gciencia.com/seccion/bitacoras/sarmiento-gamboa/>), with very high repercussion in the social network. In the Annex II a press report of the is collected.

## 10. INCIDENTS OF THE CRUISE

The major incidence was the replacement of the new cable of the CTD winch. The operation was done the 17<sup>th</sup> of June delaying the beginning of the cruise. Before doing the test station with the rosette, a weight of 500 kg was attached to cable and a testing of mechanical system was done. This test showed that the cable was not well installed and many faults and stroke occurred during the recovery of the cable and the weight. Finally, the 19 of June the decision to come back Vigo to repeat the cable installation was taken. During the night from Monday 20<sup>th</sup> to early Tuesday 21<sup>st</sup> of June the cable was again installed using a more specific machine keeping the tension of the cable between 500 to 1000 kg-F. Early morning the 21<sup>st</sup>, a station test was done with the 500-kg-weight to 2000 m depth and later again to 4500 m depth showing a good performance of the winch. A total of 138 stations were done with a total of 710 km of the CTD-rosette traveling along the water column. No fail in the cable was observed during the rest of the cruise. Even in bad weather condition very few times we observed loss the tension in the cable. Thus, the weight of the rosette, about 750 kg, was very appropriate. We observed negative velocity in the CTD rosette only very rarely, and the cable velocity was kept constant at 60 meter per min (except near the surface and the bottom).

The previous facts and the very good behavior of the speed of the ship made us recover most of the time lost with the cable replacement. During the BOCATS cruise, we performed the 99 stations of OVIDE section in a time record of 22 days including 29 sediment stations.

We removed a couple of stations during the second week to avoid bad weather in the Portugal-Azores area (the distance between stations was increased homogeneously to 37.5 Nm instead of 25 Nm between stations 14 and 18). The ship was able to work with 35 knots of wind for several hours. However, in the stations with BOX-CORER, the length of the station reached



about 5-6 hour putting the Dynamic Position system in risk because overheating. For this reason, and because of an unfavorable weather forecast in the Irminger Sea, the last part of the OVIDE section only CTD-rosette station was done in the way to Greenland doing the BOX-CORER station in the way-back to RREX section.

Other incidence is related to the functionality of the starboard cable used to sediment sampling (corer, box-corer, etc.). A second-hand cable 8000 m long has been acquired recently, but it can be used only up to 4000 m depth because a torsion was detected some meters after. This fail avoids operating safely below that depth. This fact compelled to change the operation and to use the multipurpose crane (by the stern) to retrieve box-core samples. For this kind of sampling it is not a major problem, but make impossible the recovering of gravity and piston cores in sites deeper of 4000 m, restricting the functionality of the vessel.

## 11. ACKNOWLEDGEMENTS

We want to express a great satisfaction concerning the progress of the cruise. No major problem was encountered except a number of stations that had to be removed due to bad sea conditions. Crew, technician and scientific teams were very competent, and then we were able to enjoy a very good atmosphere on board. The work done together within this good atmosphere has resulted in very good quality data. Thank you all!

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## **13. ANNEX I: Bottle sampling**

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
0	3	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	4	4919	2.508	34.8924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	5	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	6	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	7	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	8	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	9	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	10	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	11	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	12	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	13	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	14	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	15	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	16	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	17	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	18	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	19	4919	2.508	34.8926	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	20	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	21	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	22	4919	2.508	34.8925	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	23	4919	2.508	34.8924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	24	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	25	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	26	4919	2.508	34.8925	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	27	4919	2.508	34.8925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	28	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	29	4919	2.508	34.8924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
0	30	4919	2.508	34.8926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
1	3	144.1	12.74	35.7048	✓	✓	✓	✓	✓	✓	✓	1	ns	ns	ns	ns	ns
1	4	144	12.74	35.7042	✓	✓	✓	✓	✓	✓	✓	ns	ns	1-1	1	ns	ns
1	5	100.7	13.11	35.7141	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	ns	ns	ns
1	6	100.6	13.11	35.7142	✓	✓	✓	✓	✓	✓	✓	ns	ns	1-2	2	ns	ns
1	7	51	13.63	35.709	✓	✓	✓	✓	ns	ns	ns	3	ns	ns	ns	ns	ns
1	8	51	13.63	35.7091	✓	✓	✓	✓	✓	✓	✓	ns	ns	1-3	3	ns	ns
1	9	5.1	17.85	34.8879	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
1	10	5	17.83	34.8914	✓	✓	✓	✓	✓	✓	✓	ns	ns	1-4	4	ns	ns
2	3	380.8	11.53	35.6713	✓	✓	✓	✓	✓	✓	✓	1	ns	ns	ns	ns	ns
2	4	380.8	11.53	35.6723	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
2	5	300.8	11.75	35.6409	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
2	6	201.6	12.38	35.6826	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	ns	ns	ns
2	7	150.3	12.74	35.7022	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
2	8	101	13.02	35.7089	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
2	9	50.3	13.83	35.6738	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
2	10	4.5	18.71	34.9983	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
3	3	814.4	11.84	36.1317	✓	✓	✓	✓	✓	✓	✓	1	1297	ns	ns	ns	ns
3	5	700.5	11.85	36.064	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
3	6	700.4	11.85	36.0636	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
3	7	599.8	11.66	35.9197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
3	9	479.7	11.38	35.6522	✓	✓	✓	✓	✓	✓	✓	2	1298	ns	ns	ns	ns
3	11	401	11.52	35.6156	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
3	13	300.9	12.01	35.6617	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
3	15	200.8	12.49	35.6951	✓	✓	✓	✓	✓	✓	✓	4	1299	ns	ns	ns	ns
3	17	150.4	12.99	35.7424	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
3	19	100.6	13.34	35.7531	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
3	21	50.5	13.81	35.72	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	ns	ns
3	23	3.5	18.83	34.9965	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
4	3	1441	8.947	35.8708	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> IPMA	<sup>13</sup> C LOCEAN
					ity	Winkl											
4	4	1403	9.011	35.8831	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	5	1201	10.72	36.1583	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	6	999.5	11.4	36.2099	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	7	898.9	11.7	36.2133	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	8	799.5	11.78	36.1612	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	9	700.5	11.85	36.0707	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	10	600.2	11.51	35.871	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	11	499.2	11.42	35.7182	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	12	399.1	11.43	35.6046	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	13	301	11.98	35.6679	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	14	199.4	12.53	35.6999	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	15	150.2	13.02	35.747	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	16	91.3	13.58	35.7719	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	17	47.6	15.28	35.6898	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
4	18	4.5	18.86	35.0059	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
5	3	2774	3.045	34.9677	✓	✓	✓	✓	ns	ns	ns	1	2301	ns	ns	ns	ns
5	4	2774	3.046	34.9677	✓	✓	✓	✓	✓	✓	✓	ns	ns	5-1	5	5-1	ns
5	5	2250	3.811	35.0416	✓	✓	✓	✓	ns	ns	ns	ns	ns	5-2	6	5-2	ns
5	6	2001	4.384	35.1022	✓	✓	✓	✓	✓	✓	✓	2	1302	5-3	ns	5-3	ns
5	7	2001	4.387	35.1026	✓	✓	✓	✓	✓	✓	✓	ns	ns	5-4	ns	5-4	ns
5	8	1800	4.896	35.1598	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	7	5-5	ns
5	9	1602	7.473	35.6104	✓	✓	✓	✓	✓	✓	✓	3	1303	5-5	ns	5-6	ns
5	10	1401	9.491	35.9703	✓	✓	✓	✓	✓	✓	✓	4	1306	5-6	8	5-7	ns
5	11	1401	9.492	35.9706	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
5	12	1201	10.99	36.21	✓	✓	✓	✓	✓	✓	✓	5	1304	5-7	9	5-8	ns
5	13	1002	11.34	36.1823	✓	✓	✓	✓	✓	✓	✓	ns	1307	5-8	10	5-9	ns
5	14	1002	11.33	36.1787	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
5	15	900.7	11.08	36.0253	✓	✓	✓	✓	✓	✓	✓	6	1308	ns	11	ns	ns
5	16	798.7	11.72	36.0965	✓	ns	✓	✓	✓	✓	✓	ns	ns	5-9	12	5-10	ns
5	17	700.6	11.46	35.9079	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	13	ns	ns
5	18	700.6	11.46	35.9104	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	5-11	ns
5	19	601	11.71	35.8433	✓	✓	✓	✓	✓	✓	✓	ns	ns	5-10	ns	5-12	ns
5	20	499	11.29	35.6215	✓	✓	✓	✓	✓	✓	✓	8	1309	5-11	14	5-13	ns
5	21	499.1	11.29	35.6218	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
5	22	397.6	11.63	35.6284	✓	✓	✓	✓	✓	✓	✓	9	ns	5-12	15	5-14	ns
5	23	298.2	12.05	35.654	✓	✓	✓	✓	✓	✓	✓	ns	ns	5-13	16	5-15	ns
5	24	200.1	12.78	35.7167	✓	✓	✓	✓	✓	✓	✓	10	1310	5-14	17	5-16	ns
5	25	200.1	12.79	35.7176	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
5	26	149.2	13.09	35.7109	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	5-17	ns
5	27	100.7	13.55	35.765	✓	✓	✓	✓	✓	✓	✓	12	ns	5-15	18	5-18	ns
5	28	100.7	13.55	35.7646	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
5	29	51.3	14.86	35.7292	ns	✓	✓	✓	✓	✓	✓	13	ns	ns	19	5.19	ns
5	30	5	18.93	35.0506	✓	✓	✓	✓	✓	✓	✓	14	1311	5-16	20	ns	ns
6	3	3436	2.613	34.9209	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	4	3250	2.685	34.9298	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	5	3001	2.804	34.9433	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	6	2751	3.053	34.9671	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	7	2501	3.37	34.9981	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	8	2252	3.806	35.0456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	9	2122	3.945	35.0495	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	10	1801	4.726	35.1347	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	11	1601	6.782	35.4859	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	12	1401	9.201	35.9056	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	13	1201	10.73	36.1532	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	14	1002	10.87	36.0396	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	15	900.8	11.49	36.1207	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	16	800.6	11.59	36.0715	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
6	17	700.9	11.63	35.9709	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	18	600.7	11.32	35.7744	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	19	501.2	11.33	35.6423	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	20	401.2	11.54	35.6225	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	21	301.1	11.9	35.6424	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	22	201.6	12.7	35.7204	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	23	150.8	13.12	35.7446	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	24	100.6	13.6	35.7717	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	25	51.4	14.56	35.7456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
6	26	4.2	19.03	35.2168	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	3	3586	2.571	34.9155	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	4	3586	2.571	34.9155	✓	✓	✓	✓	✓	✓	✓	1	1312	ns	ns	ns	ns
7	5	3500	2.585	34.9179	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	6	3250	2.717	34.9332	✓	✓	✓	✓	✓	✓	✓	2	1313	ns	ns	ns	ns
7	7	3001	2.878	34.9502	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	8	2751	3.089	34.9723	✓	✓	✓	✓	✓	✓	✓	3	1314	ns	ns	ns	ns
7	9	2501	3.377	35.0007	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	10	2251	3.676	35.0257	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	11	2002	4.309	35.1	✓	✓	✓	✓	✓	✓	✓	4	1315	ns	ns	ns	ns
7	12	1800	5.276	35.2389	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	13	1601	6.696	35.4756	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	14	1401	8.891	35.8578	✓	✓	✓	✓	✓	✓	✓	5	1316	ns	ns	ns	ns
7	15	1201	10.76	36.1683	✓	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
7	16	1201	10.77	36.1697	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	17	1002	10.81	36.0377	✓	✓	✓	✓	✓	✓	✓	6	1318	ns	ns	ns	ns
7	18	900.7	11.21	36.0491	✓	✓	✓	✓	✓	✓	✓	7	1319	ns	ns	ns	ns
7	19	801.3	11.55	36.0572	ns	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	20	700.7	11.58	35.9473	ns	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
7	21	601.3	11.34	35.7616	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	22	501.4	11.24	35.5997	✓	✓	✓	✓	✓	✓	✓	9	1320	ns	ns	ns	ns
7	23	401.4	11.52	35.6099	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	24	401.4	11.52	35.6099	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	25	301.7	11.87	35.6339	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	26	201.3	12.43	35.6842	✓	✓	✓	✓	✓	✓	✓	10	1321	ns	ns	ns	ns
7	27	149.5	13	35.7398	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
7	28	100.8	13.5	35.7604	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
7	29	50.9	14.74	35.7386	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	ns	ns
7	30	4	19.54	35.2736	✓	✓	✓	✓	✓	✓	✓	13	1322	ns	ns	ns	ns
8	3	3953	2.468	34.9017	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	4	3749	2.493	34.9066	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	5	3502	2.578	34.9175	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	6	3250	2.695	34.931	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	7	3250	2.696	34.931	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
8	8	2998	2.85	34.9478	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	9	2753	3.13	34.9749	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	10	2502	3.426	35.0035	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	11	2251	3.895	35.0581	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	12	2002	4.453	35.1224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	13	1801	5.319	35.2518	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	14	1603	6.97	35.516	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	15	1401	9.152	35.8929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	16	1203	10.7	36.152	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	17	1102	11.25	36.2134	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	18	901.9	11.45	36.0867	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	19	801.6	11.85	36.0777	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	20	699.7	11.89	35.9788	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	21	601.3	11.69	35.7954	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
8	22	501.8	11.72	35.717	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	23	400.5	11.67	35.6197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	24	302	12.19	35.6712	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	25	199.8	13.14	35.7921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	26	152.7	13.57	35.8119	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	27	101.8	14.22	35.9205	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	28	53.5	14.75	35.9026	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	29	4.2	18.8	35.628	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
8	30	4.4	18.8	35.628	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
9	3	4406	2.471	34.8968	✓	✓	✓	✓	✓	✓	✓	1	1323	9-1	25	ns	ns
9	4	4002	2.471	34.9018	✓	✓	✓	✓	✓	✓	✓	ns	1324	ns	ns	ns	ns
9	5	3749	2.513	34.9088	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	6	3749	2.514	34.9089	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	7	3500	2.59	34.9189	✓	✓	✓	✓	✓	✓	✓	ns	ns	9-2	26	ns	ns
9	8	3250	2.701	34.9316	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	9	3001	2.874	34.9496	✓	✓	✓	✓	✓	✓	✓	2	1325	9-3	27	ns	ns
9	10	2750	3.135	34.9783	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	11	2500	3.455	35.0143	✓	✓	✓	✓	✓	✓	✓	ns	ns	9-4	28	ns	ns
9	12	2244	3.829	35.0507	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	13	2001	4.4	35.1174	✓	✓	✓	✓	✓	✓	✓	3	1326	9-5	29	ns	ns
9	14	1796	5.251	35.2449	✓	✓	✓	✓	✓	✓	✓	4	1327	ns	ns	ns	ns
9	15	1603	6.766	35.4909	✓	✓	✓	✓	✓	✓	✓	ns	ns	9-6	30	ns	ns
9	16	1399	9.444	35.9629	✓	✓	✓	✓	✓	✓	✓	5	1328	ns	ns	ns	ns
9	17	1201	10.97	36.1997	✓	✓	✓	✓	✓	✓	✓	6	1329	9-7	31	ns	ns
9	18	999.5	11.49	36.1914	✓	✓	✓	✓	✓	✓	✓	7	1330	9-8	32	ns	ns
9	19	897.9	11.88	36.1962	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	20	803.3	11.96	36.121	✓	✓	✓	✓	✓	✓	✓	8	1331	9-9	33	ns	ns
9	21	700.4	11.92	35.9863	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	22	601	11.75	35.8231	✓	✓	✓	✓	✓	✓	✓	9	ns	9-10	34	ns	ns
9	23	500.4	11.6	35.6633	✓	✓	✓	✓	✓	✓	✓	10	1333	9-11	35	ns	ns
9	24	403.5	11.93	35.6666	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
9	25	302.3	12.52	35.7196	✓	✓	✓	✓	✓	✓	✓	ns	ns	9-12	36	ns	ns
9	26	203	13.45	35.8458	ns	✓	✓	✓	✓	✓	✓	12	1334	9-13	37	ns	ns
9	27	150	14.03	35.9221	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
9	28	99.7	14.55	36.013	✓	✓	✓	✓	✓	✓	✓	13	ns	9-14	38	ns	ns
9	29	52	15.11	35.8668	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
9	30	4.6	18.91	35.8387	✓	✓	✓	✓	✓	✓	✓	15	541	9-15	39	ns	ns
10	3	4932	2.505	34.8936	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-1	ns
10	4	4500	2.475	34.8964	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-2	ns
10	5	4001	2.487	34.9035	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-3	ns
10	6	3749	2.524	34.91	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-4	ns
10	7	3501	2.591	34.9189	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
10	8	3502	2.591	34.9189	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-5	ns
10	9	3000	2.857	34.9486	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-6	ns
10	10	2751	3.103	34.9748	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-7	ns
10	11	2503	3.439	35.0117	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-8	ns
10	12	2250	3.866	35.0569	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-9	ns
10	13	2081	4.078	35.0694	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-10	ns
10	14	1874	4.657	35.1419	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-11	ns
10	15	1600	6.984	35.5348	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-12	ns
10	16	1400	9.167	35.9096	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-13	ns
10	17	1202	10.95	36.219	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-14	ns
10	18	1001	11.41	36.1966	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-15	ns
10	19	900.7	11.67	36.1764	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-16	ns
10	20	799.8	12.06	36.1687	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-17	ns
10	21	699.9	11.93	36.0203	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-18	ns
10	22	600.4	11.67	35.8321	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-19	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
10	23	499.9	11.71	35.7207	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-20	ns
10	24	400.9	11.81	35.6548	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-21	ns
10	25	300.3	12.18	35.6736	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-22	ns
10	26	200.9	13.17	35.8025	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-23	ns
10	27	151	13.38	35.781	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-24	ns
10	28	101.2	13.6	35.7767	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-25	ns
10	29	49.9	14.62	35.7622	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-26	ns
10	30	4.1	18.97	35.8054	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	10-27	10-27B
11	3	5185	2.539	34.8938	✓	✓	✓	✓	✓	✓	✓	1	530	ns	ns	ns	ns
11	4	4849	2.5	34.8946	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	5	4402	2.474	34.8978	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	6	4000	2.495	34.9046	✓	✓	✓	✓	✓	✓	✓	2	531	ns	ns	ns	ns
11	7	3501	2.6	34.9199	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	8	3248	2.7	34.9312	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	9	3000	2.856	34.9477	✓	✓	✓	✓	✓	✓	✓	3	532	ns	ns	ns	ns
11	10	2750	3.089	34.9723	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	11	2501	3.373	34.9987	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	12	2250	3.68	35.0189	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	13	2000	3.992	35.0269	✓	✓	✓	✓	✓	✓	✓	4	533	ns	ns	ns	ns
11	14	1800	4.626	35.105	✓	✓	✓	✓	✓	✓	✓	ns	534	ns	ns	ns	ns
11	15	1600	6.094	35.3494	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	16	1390	8.453	35.7573	✓	✓	✓	✓	✓	✓	✓	5	535	ns	ns	ns	ns
11	17	1199	10.02	35.9955	✓	✓	✓	✓	✓	✓	✓	6	536	ns	ns	ns	ns
11	18	999.5	10.75	36.0044	✓	✓	✓	✓	✓	✓	✓	7	537	ns	ns	ns	ns
11	19	901	11.41	36.0792	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	20	800.8	11.8	36.0642	✓	✓	✓	✓	✓	✓	✓	8	538	ns	ns	ns	ns
11	21	699.6	11.45	35.8342	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	22	599.4	11.26	35.6472	✓	✓	✓	✓	✓	✓	✓	9	539	ns	ns	ns	ns
11	23	501.4	11.35	35.5954	✓	✓	✓	✓	✓	✓	✓	10	540	ns	ns	ns	ns
11	24	401.1	11.68	35.6153	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
11	25	301.2	12.1	35.656	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	26	199.7	12.5	35.6508	✓	✓	✓	✓	✓	✓	✓	12	542	ns	ns	ns	ns
11	27	150.2	12.96	35.7145	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
11	28	100.5	13.47	35.771	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
11	29	50	15.2	35.7667	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
11	30	4.8	19.04	35.8072	✓	✓	✓	✓	✓	✓	✓	15	543	ns	ns	ns	ns
12	3	5306	2.551	34.8934	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	4	4699	2.488	34.8956	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	5	4600	2.481	34.8962	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	6	4000	2.518	34.907	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	7	3501	2.615	34.9212	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	8	3245	2.714	34.932	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	9	3000	2.803	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	10	2749	3.026	34.9616	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	11	2503	3.294	34.9846	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	12	2251	3.637	35.0126	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	13	2000	4.195	35.0677	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	14	1801	4.99	35.1769	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	15	1602	6.051	35.3415	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	16	1402	7.752	35.6211	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	17	1200	10.51	36.1311	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	18	1200	10.51	36.1313	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	19	1001	10.86	36.055	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	20	800.3	11.23	35.9389	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	21	701.6	11.29	35.8224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	22	601.1	11.24	35.6629	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	23	500.6	11.44	35.6074	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-1	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
12	24	400.8	11.79	35.6211	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-2	ns
12	25	300.2	12.23	35.662	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-3	ns
12	26	200.1	12.86	35.7101	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-4	ns
12	27	151.2	13.25	35.7522	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-5	ns
12	28	101.1	13.77	35.8125	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	12-6	ns
12	29	50.4	14.46	35.8949	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
12	30	4.7	18.92	35.6847	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	3	5354	2.554	34.8932	✓	✓	✓	✓	✓	✓	✓	1	544	13-1	40	ns	ns
13	4	5001	2.512	34.894	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	5	4502	2.477	34.8971	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	6	4001	2.516	34.9068	✓	✓	✓	✓	✓	✓	✓	2	545	13-2	41	ns	ns
13	7	3502	2.62	34.9216	✓	✓	✓	✓	✓	✓	✓	ns	ns	13-3	42	ns	ns
13	8	3250	2.72	34.9327	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	9	3000	2.847	34.9445	✓	✓	✓	✓	✓	✓	✓	3	546	13-4	43	ns	ns
13	10	2749	3.013	34.9585	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	11	2498	3.298	34.9841	✓	✓	✓	✓	✓	✓	✓	ns	ns	13-5	44	ns	ns
13	12	2250	3.819	35.0451	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	13	1998	4.357	35.0985	✓	✓	✓	✓	✓	✓	✓	4	518	13-6	45	ns	ns
13	14	1805	5.314	35.2428	✓	✓	✓	✓	✓	✓	✓	ns	519	ns	ns	ns	ns
13	15	1598	6.889	35.5045	✓	✓	✓	✓	✓	✓	✓	ns	ns	13-7	46	ns	ns
13	16	1402	8.941	35.8513	✓	✓	✓	✓	✓	✓	✓	5	520	ns	ns	ns	ns
13	17	1202	10.83	36.1704	✓	✓	✓	✓	✓	✓	✓	6	521	13-8	47	ns	ns
13	18	1001	11.05	36.0868	✓	✓	✓	✓	✓	✓	✓	7	522	13-9	48	ns	ns
13	19	901.3	11.31	36.0498	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	20	801.1	11.64	36.0112	✓	✓	✓	✓	✓	✓	✓	8	523	13-10	49	ns	ns
13	21	685.2	11.34	35.7725	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	22	600.8	11.42	35.6962	✓	✓	✓	✓	✓	✓	✓	9	525	13-11	50	ns	ns
13	23	501	11.71	35.6605	✓	✓	✓	✓	✓	✓	✓	10	526	ns	ns	ns	ns
13	24	402.1	11.99	35.6498	✓	✓	✓	✓	✓	✓	✓	11	ns	13-12	51	ns	ns
13	25	300.2	12.7	35.7377	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	26	201.1	13.74	35.9036	✓	✓	✓	✓	✓	✓	✓	12	527	13-13	52	ns	ns
13	27	149.2	14.53	36.0223	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
13	28	98.5	15.15	36.1196	✓	✓	✓	✓	✓	✓	✓	13	ns	13-14	53	ns	ns
13	29	52.5	16.22	36.0236	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
13	30	4.9	19.05	35.9654	✓	✓	✓	✓	✓	✓	✓	15	528	13-15	54	ns	ns
14	3	5403	2.56	34.8931	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	4	4600	2.478	34.8959	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	5	4499	2.477	34.8971	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	6	3999	2.516	34.9068	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	7	3500	2.608	34.9204	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	8	3249	2.694	34.9302	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	9	3000	2.804	34.9415	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	10	2750	2.964	34.9559	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	11	2501	3.227	34.9763	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	12	2250	3.537	34.996	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	13	2001	4.142	35.0625	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	14	1800	4.907	35.1703	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	15	1602	6.045	35.3357	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	16	1401	8.683	35.812	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	17	1202	10.5	36.1291	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	18	1000	11.05	36.0896	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	19	900.2	11.29	36.0383	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	20	800.7	11.61	35.9902	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	21	700.1	11.29	35.802	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	22	600.4	11.32	35.6485	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	23	501.1	11.55	35.6118	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	24	400.3	11.87	35.631	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
14	25	300.5	12.34	35.6826	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	26	201.2	13.1	35.77	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	27	120.4	14.05	35.8633	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	28	81.5	14.46	35.9278	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	29	50.9	15.06	35.9229	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
14	30	3.8	19.1	36.0452	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	3	5444	2.565	34.8931	✓	✓	✓	✓	✓	✓	✓	1	505	ns	ns	ns	ns
15	4	5002	2.517	34.8947	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	5	4501	2.485	34.898	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	6	4001	2.532	34.9084	✓	✓	✓	✓	✓	✓	✓	2	506	ns	ns	ns	ns
15	7	3502	2.635	34.9227	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	8	3230	2.736	34.9336	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	9	3003	2.83	34.9431	✓	✓	✓	✓	✓	✓	✓	3	507	ns	ns	ns	ns
15	10	2750	2.994	34.9576	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	11	2501	3.241	34.9775	✓	✓	✓	✓	✓	✓	✓	4	508	ns	ns	ns	ns
15	12	2270	3.547	35.0011	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	13	2001	4.114	35.0602	✓	✓	✓	✓	✓	✓	✓	5	509	ns	ns	ns	ns
15	14	1800	4.822	35.1579	✓	✓	✓	✓	✓	✓	✓	ns	510	ns	ns	ns	ns
15	15	1601	6.419	35.4279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	16	1400	7.698	35.6116	✓	✓	✓	✓	✓	✓	✓	6	511	ns	ns	ns	ns
15	17	1101	10.33	36.0114	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	18	999.7	10.62	35.9815	✓	✓	✓	✓	✓	✓	✓	7	512	ns	ns	ns	ns
15	19	900.8	10.87	35.9679	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	20	801.8	10.95	35.8944	✓	✓	✓	✓	✓	✓	✓	8	513	ns	ns	ns	ns
15	21	702.1	11.07	35.8102	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	22	600.4	11.08	35.6826	✓	✓	✓	✓	✓	✓	✓	9	514	ns	ns	ns	ns
15	23	501.4	11.15	35.6082	✓	✓	✓	✓	✓	✓	✓	10	515	ns	ns	ns	ns
15	24	400	11.45	35.5992	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
15	25	300.1	11.79	35.6241	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	26	200.5	12.34	35.6768	✓	✓	✓	✓	✓	✓	✓	12	516	ns	ns	ns	ns
15	27	149.8	12.7	35.689	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
15	28	99.8	13.09	35.7123	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
15	29	51	13.72	35.7323	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
15	30	8.2	18.7	35.7563	✓	✓	✓	✓	✓	✓	✓	15	517	ns	ns	ns	ns
16	3	5444	2.568	34.8936	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	4	4803	2.499	34.8956	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	5	4402	2.488	34.8995	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	6	4000	2.53	34.9082	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	7	3503	2.644	34.9239	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	8	3199	2.767	34.9367	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	9	3001	2.864	34.9459	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	10	2700	3.082	34.9644	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	11	2501	3.308	34.9812	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	12	2203	3.657	35.0004	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	13	2000	4.013	35.0286	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	14	1802	4.693	35.1155	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	15	1587	5.852	35.2833	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	16	1401	7.896	35.6217	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	17	1202	9.908	35.9567	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	18	1094	10.74	36.0874	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	19	902.1	11.57	36.1449	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	20	801.2	11.74	36.102	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	21	701.9	11.42	35.9075	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	22	602	11.15	35.7106	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	23	504.5	11.16	35.5974	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-1	ns
16	24	400.2	11.46	35.5924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-2	ns
16	25	301.8	11.82	35.6242	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-3	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
16	26	201.2	12.48	35.6712	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-4	ns
16	27	150.3	12.66	35.6561	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-5	ns
16	28	100.3	12.95	35.6923	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	16-6	ns
16	29	51.4	13.39	35.7131	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
16	30	3.7	18.35	35.7748	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	3	5433	2.568	34.8936	✓	✓	✓	✓	✓	✓	✓	1	1336	17-1	56	ns	ns
17	4	4799	2.503	34.8962	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	5	4400	2.495	34.9004	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-2	57	ns	ns
17	6	4001	2.532	34.9086	✓	✓	✓	✓	✓	✓	✓	2	1337	ns	ns	ns	ns
17	7	3501	2.63	34.9227	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-3	58	ns	ns
17	8	3260	2.715	34.9321	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	9	3000	2.849	34.9448	✓	✓	✓	✓	✓	✓	✓	3	1338	17-4	59	ns	ns
17	10	2750	3.034	34.96	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	11	2500	3.279	34.9754	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-5	60	ns	ns
17	12	2201	3.61	34.9882	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	13	2000	3.958	35.0156	✓	✓	✓	✓	✓	✓	✓	4	1340	17-6	61	ns	ns
17	14	1801	4.607	35.0984	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	15	1601	5.627	35.2474	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-7	55	ns	ns
17	16	1401	7.589	35.5727	✓	✓	✓	✓	✓	✓	✓	5	1342	ns	ns	ns	ns
17	17	1202	9.502	35.8889	✓	✓	✓	✓	✓	✓	✓	6	1346	17-8	62	ns	ns
17	18	1001	10.46	35.9608	✓	✓	✓	✓	✓	✓	✓	7	1347	ns	ns	ns	ns
17	19	900.4	10.68	35.9021	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-9	63	ns	ns
17	20	800.4	10.92	35.8427	✓	✓	✓	✓	✓	✓	✓	8	1348	ns	ns	ns	ns
17	21	700.9	10.83	35.6894	✓	✓	✓	✓	✓	✓	✓	ns	ns	17-10	64	ns	ns
17	22	600.6	10.99	35.6092	✓	✓	✓	✓	✓	✓	✓	9	1349	17-11	65	ns	ns
17	23	501.1	11.32	35.6022	✓	✓	✓	✓	✓	✓	✓	10	1350	ns	ns	ns	ns
17	24	400	11.48	35.5792	✓	✓	✓	✓	✓	✓	✓	11	1352	17-12	66	ns	ns
17	25	302.1	11.81	35.6047	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	26	200	12.36	35.6442	✓	✓	✓	✓	✓	✓	✓	12	577	17-13	67	ns	ns
17	27	150.4	12.57	35.6501	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
17	28	99.6	13	35.6967	✓	✓	✓	✓	✓	✓	✓	13	ns	17-14	68	ns	ns
17	29	50.4	14.04	35.6883	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
17	30	4.3	18.18	35.7271	✓	✓	✓	✓	✓	✓	✓	15	1341	17-15	69	ns	ns
18	3	5404	2.569	34.8943	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	4	4900	2.512	34.8957	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	5	4500	2.493	34.8989	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	6	3999	2.52	34.9075	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	7	3501	2.628	34.9225	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	8	3002	2.861	34.9452	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	9	2751	3.062	34.9607	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	10	2501	3.257	34.9634	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	11	2250	3.445	34.9557	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	12	2002	3.844	34.9817	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	13	1801	4.24	35.0146	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	14	1601	4.92	35.1062	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	15	1402	7.138	35.4733	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	16	1300	8.007	35.5991	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	17	1201	8.839	35.7246	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	18	1100	9.252	35.7419	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	19	1002	9.458	35.7131	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	20	900.5	9.484	35.5742	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	21	749.8	10.41	35.5574	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	22	650.5	10.76	35.5339	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	23	500.1	11.34	35.5497	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-1	ns
18	24	401.4	11.8	35.6009	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-2	ns
18	25	350.7	12.01	35.6261	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-3	ns
18	26	250.5	12.34	35.6283	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-4	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
18	27	151.7	12.76	35.6568	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-5	ns
18	28	101.2	13.12	35.6942	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	18-6	ns
18	29	50	13.77	35.6907	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
18	30	5.7	18.05	35.7383	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	3	5160	2.54	34.8946	✓	✓	✓	✓	✓	✓	✓	1	563	ns	ns	ns	ns
19	4	4750	2.493	34.8957	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	5	4500	2.482	34.8977	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	6	4002	2.507	34.9062	✓	✓	✓	✓	✓	✓	✓	2	564	ns	ns	ns	ns
19	7	3502	2.608	34.9207	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	8	3249	2.695	34.9306	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	9	3001	2.833	34.9435	✓	✓	✓	✓	✓	✓	✓	3	565	ns	ns	ns	ns
19	10	2750	3.005	34.954	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	11	2500	3.216	34.9595	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	12	2250	3.378	34.9374	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	13	2000	3.671	34.9501	✓	✓	✓	✓	✓	✓	✓	4	566	ns	ns	ns	ns
19	14	1800	4.079	34.9974	✓	✓	✓	✓	✓	✓	✓	5	567	ns	ns	ns	ns
19	15	1600	4.561	35.0446	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	16	1400	6.204	35.3058	✓	✓	✓	✓	✓	✓	✓	6	568	ns	ns	ns	ns
19	17	1201	8.32	35.6265	✓	✓	✓	✓	✓	✓	✓	7	569	ns	ns	ns	ns
19	18	999.6	9.479	35.7221	✓	✓	✓	✓	✓	✓	✓	8	570	ns	ns	ns	ns
19	19	900.5	9.546	35.594	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	20	800.1	10.05	35.5552	✓	✓	✓	✓	✓	✓	✓	9	571	ns	ns	ns	ns
19	21	700	10.64	35.5617	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	22	600.9	10.97	35.5439	✓	✓	✓	✓	✓	✓	✓	10	573	ns	ns	ns	ns
19	23	500.1	11.33	35.5538	✓	✓	✓	✓	✓	✓	✓	11	574	ns	ns	ns	ns
19	24	400	11.73	35.5797	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	ns	ns
19	25	300.8	11.97	35.5445	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	26	199.6	12.77	35.6666	✓	✓	✓	✓	✓	✓	✓	13	575	ns	ns	ns	ns
19	27	149.1	13.17	35.7106	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
19	28	100	13.42	35.7344	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
19	29	50.6	13.86	35.7607	✓	✓	✓	✓	✓	✓	✓	15	ns	ns	ns	ns	ns
19	30	5.2	17.57	35.6895	✓	✓	✓	✓	✓	✓	✓	16	576	ns	ns	ns	ns
20	3	4253	2.493	34.9016	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	4	4000	2.507	34.9062	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	5	3749	2.569	34.915	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	6	3500	2.623	34.9222	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	7	3249	2.724	34.9328	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	8	3000	2.843	34.9434	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	9	2752	3.019	34.9556	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	10	2500	3.188	34.9566	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	11	2252	3.422	34.9523	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	12	2001	3.847	34.9873	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	13	1801	4.05	34.9929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	14	1601	4.744	35.0899	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	15	1400	6.34	35.3432	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	16	1201	8.204	35.6332	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	17	1102	8.885	35.7055	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	18	1001	9.225	35.6878	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	19	899.7	9.759	35.7019	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	20	801.4	9.738	35.5814	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	21	700.1	10.28	35.5614	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	22	600.9	10.65	35.5304	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	23	500.2	11.07	35.5371	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	24	400.2	11.37	35.5456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	25	300.6	11.88	35.6063	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	26	200	12.1	35.5881	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	27	150	12.35	35.6148	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
20	28	100.3	12.66	35.6481	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	29	50.2	13.7	35.6682	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
20	30	4	18.15	35.7056	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	3	5216	2.557	34.8959	✓	✓	✓	✓	✓	✓	✓	1	549	21-1	70	ns	ns
21	4	4800	2.517	34.8975	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	5	4401	2.502	34.9012	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	6	4000	2.538	34.9093	✓	✓	✓	✓	✓	✓	✓	2	551	21-2	76	ns	ns
21	7	3502	2.633	34.9227	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	8	3250	2.731	34.9328	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	9	3000	2.855	34.9417	✓	✓	✓	✓	✓	✓	✓	3	552	21-3	80	ns	ns
21	10	2751	3.016	34.9513	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	11	2499	3.22	34.9554	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	12	2250	3.453	34.9518	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-4	71	ns	ns
21	13	2001	3.772	34.9667	✓	✓	✓	✓	✓	✓	✓	4	553	ns	ns	ns	ns
21	14	1800	4.204	35.0122	✓	✓	✓	✓	✓	✓	✓	5	554	ns	ns	ns	ns
21	15	1601	4.85	35.0911	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-5	82	ns	ns
21	16	1402	6.046	35.2747	✓	✓	✓	✓	✓	✓	✓	6	555	ns	ns	ns	ns
21	17	1200	8.548	35.6932	✓	✓	✓	✓	✓	✓	✓	7	556	21-6	72	ns	ns
21	18	1001	9.718	35.7889	✓	✓	✓	✓	✓	✓	✓	8	557	ns	ns	ns	ns
21	19	878.1	10.38	35.8124	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-7	77	ns	ns
21	20	801.8	10.48	35.7324	✓	✓	✓	✓	✓	✓	✓	9	558	ns	ns	ns	ns
21	21	700	10.47	35.575	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-8	83	ns	ns
21	22	600.9	10.84	35.5449	✓	✓	✓	✓	✓	✓	✓	10	559	ns	ns	ns	ns
21	23	500.6	11.18	35.5428	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
21	24	400.2	11.49	35.552	✓	ns	✓	✓	✓	✓	✓	11	560	21-9	73	ns	ns
21	25	301.5	11.65	35.5136	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-10	78	ns	ns
21	26	200.4	12.08	35.5525	✓	✓	✓	✓	✓	✓	✓	12	561	21-11	84	ns	ns
21	27	150.6	12.55	35.6289	✓	✓	✓	✓	✓	✓	✓	ns	ns	21-12	74	ns	ns
21	28	99.9	12.97	35.7031	✓	✓	✓	✓	✓	✓	✓	13	ns	21-13	75	ns	ns
21	29	51.2	13.5	35.7446	✓	✓	✓	✓	✓	✓	✓	14	ns	21-14	79	ns	ns
21	30	5.2	17.92	35.6606	✓	✓	✓	✓	✓	✓	✓	15	ns	21-15	85	ns	ns
22	3	4235	2.495	34.9018	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	4	4003	2.535	34.9086	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	5	3750	2.57	34.9145	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	6	3502	2.604	34.9198	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	7	3250	2.667	34.9271	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	8	3002	2.808	34.9405	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	9	2751	2.984	34.9507	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	10	2502	3.173	34.9565	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	11	2252	3.416	34.9454	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	12	2002	3.75	34.9651	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	13	1804	4.217	35.0116	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	14	1601	4.977	35.1128	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	15	1401	6.128	35.2868	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	16	1200	8.627	35.7094	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	17	1099	9.171	35.7506	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	18	1002	9.639	35.7729	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	19	900	9.919	35.737	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	20	800.1	10.14	35.6766	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	21	701	10.29	35.559	ns	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	22	600.3	10.85	35.5632	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	23	499.2	11.01	35.5191	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-1	ns
22	24	394.7	11.34	35.5403	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-2	ns
22	25	302	11.75	35.5853	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-3	ns
22	26	200.4	12.12	35.6109	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-4	ns
22	27	151.2	12.19	35.5973	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-5	ns
22	28	103.6	12.38	35.6201	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	22-6	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
22	29	51.3	12.9	35.6136	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
22	30	4.3	18.12	35.6463	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	3	4067	2.575	34.911	✓	✓	✓	✓	✓	✓	✓	1	494	ns	ns	ns	ns
23	4	3999	2.579	34.9121	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	5	3749	2.588	34.9159	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	6	3500	2.62	34.921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	7	3249	2.694	34.929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	8	3000	2.827	34.9398	✓	✓	✓	✓	✓	✓	✓	2	495	ns	ns	ns	ns
23	9	3000	2.828	34.9399	✓	✓	✓	✓	✓	✓	✓	ns	496	ns	ns	ns	ns
23	10	2750	2.969	34.9458	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	11	2501	3.13	34.9455	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	12	2251	3.334	34.9414	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	13	2001	3.661	34.9529	✓	✓	✓	✓	✓	✓	✓	3	497	ns	ns	ns	ns
23	14	1801	3.943	34.9711	✓	✓	✓	✓	✓	✓	✓	4	498	ns	ns	ns	ns
23	15	1600	4.593	35.0526	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	16	1400	6.017	35.2747	✓	✓	✓	✓	✓	✓	✓	5	499	ns	ns	ns	ns
23	17	1200	8.366	35.6502	✓	✓	✓	✓	✓	✓	✓	6	500	ns	ns	ns	ns
23	18	1000	9.703	35.7753	✓	✓	✓	✓	✓	✓	✓	7	501	ns	ns	ns	ns
23	19	899.7	9.897	35.6965	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
23	20	800.9	10.3	35.6778	✓	✓	✓	✓	✓	✓	✓	ns	502	ns	ns	ns	ns
23	21	700.2	10.1	35.4763	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	22	601	10.76	35.5232	✓	✓	✓	✓	✓	✓	✓	9	503	ns	ns	ns	ns
23	23	500.3	11.14	35.5453	✓	✓	✓	✓	✓	✓	✓	10	504	ns	ns	ns	ns
23	24	400.6	11.47	35.5751	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
23	25	300.7	11.84	35.6043	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	26	199.8	12.08	35.5987	✓	✓	✓	✓	✓	✓	✓	12	547	ns	ns	ns	ns
23	27	150.4	12.15	35.5879	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
23	28	100.8	12.39	35.6209	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
23	29	50.6	12.84	35.6419	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
23	30	4.3	17.89	35.6456	✓	✓	✓	✓	✓	✓	✓	15	562	ns	ns	ns	ns
24	3	3855	2.557	34.9117	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	4	3657	2.565	34.9147	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	5	3551	2.588	34.9178	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	6	3501	2.6	34.9192	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	7	3250	2.678	34.9279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	8	3001	2.794	34.9369	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	9	2751	2.949	34.9456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	10	2500	3.127	34.9437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	11	2251	3.398	34.9474	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	12	2001	3.572	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	13	2001	3.572	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	14	1802	3.787	34.9295	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	15	1599	4.311	34.9891	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	16	1400	5.056	35.0863	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	17	1200	6.22	35.2396	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	18	1001	7.864	35.4163	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	19	901.6	8.369	35.4054	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	20	801.5	8.483	35.2833	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	21	700.5	9.244	35.2935	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	22	596.7	10.24	35.3714	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	23	501.8	10.93	35.4654	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	24	400.3	11.24	35.4543	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	25	301	11.83	35.5188	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	26	200.1	12.5	35.618	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	27	149.7	12.77	35.6583	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	28	99.8	13.05	35.6963	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
24	29	51.1	13.52	35.7079	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
24	30	4.6	18.15	35.602	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	3	5035	2.649	34.9069	✓	✓	✓	✓	✓	✓	✓	1	481	25-1	86	ns	ns
25	4	4801	2.618	34.907	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	5	4500	2.592	34.9081	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	6	4000	2.559	34.9109	✓	✓	✓	✓	✓	✓	✓	2	482	25-2	87	ns	ns
25	7	3502	2.621	34.9213	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	8	3250	2.703	34.9298	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	9	3001	2.827	34.9392	✓	✓	✓	✓	✓	✓	✓	3	483	25-3	88	ns	ns
25	10	2749	2.976	34.9452	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	11	2500	3.229	34.9519	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	12	2252	3.45	34.956	✓	✓	✓	✓	✓	✓	✓	ns	ns	25-4	89	ns	ns
25	13	2001	3.772	34.9641	✓	✓	✓	✓	✓	✓	✓	4	484	ns	ns	ns	ns
25	14	1799	4.105	34.9924	✓	✓	✓	✓	✓	✓	✓	5	485	ns	ns	ns	ns
25	15	1600	4.18	34.9757	✓	✓	✓	✓	✓	✓	✓	ns	ns	25-5	90	ns	ns
25	16	1401	4.707	35.0358	✓	✓	✓	✓	✓	✓	✓	6	486	25-6	91	ns	ns
25	17	1202	5.6	35.1547	✓	✓	✓	✓	✓	✓	✓	7	487	ns	ns	ns	ns
25	18	1004	6.364	35.1946	✓	✓	✓	✓	✓	✓	✓	8	488	25-7	92	ns	ns
25	19	901.2	8.561	35.5641	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	20	800.7	8.341	35.4053	✓	✓	✓	✓	✓	✓	✓	9	489	ns	ns	ns	ns
25	21	700.5	8.031	35.1823	✓	✓	✓	✓	✓	✓	✓	ns	ns	25-8	93	ns	ns
25	22	601.7	9.023	35.223	✓	✓	✓	✓	✓	✓	✓	10	490	ns	ns	ns	ns
25	23	499.5	9.585	35.2135	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
25	24	402.2	10.14	35.2614	✓	✓	✓	✓	✓	✓	✓	11	491	25-9	94	ns	ns
25	25	299.5	11.02	35.3914	✓	✓	✓	✓	✓	✓	✓	ns	ns	25-10	95	ns	ns
25	26	200.8	11.64	35.4796	✓	✓	✓	✓	✓	✓	✓	12	493	25-11	96	ns	ns
25	27	151.1	12.11	35.5536	✓	✓	✓	✓	✓	✓	✓	ns	ns	25-12	97	ns	ns
25	28	101.4	12.58	35.6056	✓	✓	✓	✓	✓	✓	✓	13	ns	25-13	98	ns	ns
25	29	52.6	14.74	35.6703	✓	✓	✓	✓	✓	✓	✓	14	ns	25-14	99	ns	ns
25	30	4.7	17.75	35.6246	✓	✓	✓	✓	✓	✓	✓	15	492	25-15	100	ns	ns
26	3	4908	2.639	34.9073	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-1	26-1
26	4	4500	2.591	34.908	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-2	26-2
26	5	3999	2.56	34.9109	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-3	26-3
26	6	3500	2.617	34.9209	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-4	26-4
26	7	3247	2.718	34.931	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-5	26-5
26	8	3001	2.845	34.9401	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-6	26-6
26	9	2753	2.996	34.9447	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-7	26-7
26	10	2500	3.158	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-8	26-8
26	11	2250	3.329	34.9257	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-9	26-9
26	12	2001	3.608	34.931	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-10	26-10
26	13	1802	3.829	34.9375	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-11	26-11
26	14	1600	4.09	34.9501	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-12	26-12
26	15	1403	4.534	34.993	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-13	ns
26	16	1200	5.998	35.1936	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-14	ns
26	17	1001	9.085	35.7276	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-15	ns
26	18	1001	9.087	35.7275	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
26	19	899	8.724	35.5129	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-16	ns
26	20	802.2	8.616	35.3739	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-17	ns
26	21	701	9.927	35.4976	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-18	ns
26	22	600	10.1	35.4157	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-19	ns
26	23	501.8	10.66	35.464	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-20	ns
26	24	399	11.32	35.5518	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-21	ns
26	25	302	11.51	35.542	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-22	ns
26	26	199.2	11.92	35.5607	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-23	ns
26	27	149.6	12.06	35.5627	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-24	ns
26	28	100.7	12.4	35.5925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-25	ns
26	29	52.3	13.19	35.5909	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-26	ns
26	30	5.7	17.7	35.6078	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	26-27	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
27	3	4684	2.611	34.9076	✓	✓	✓	✓	✓	✓	✓	1	468	ns	ns	ns	ns
27	4	4000	2.566	34.9115	✓	✓	✓	✓	✓	✓	✓	2	469	ns	ns	ns	ns
27	5	3749	2.582	34.9156	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	6	3502	2.627	34.9217	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	7	3248	2.717	34.931	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	8	3001	2.834	34.9389	✓	✓	✓	✓	✓	✓	✓	3	470	ns	ns	ns	ns
27	9	2702	3.007	34.9406	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	10	2399	3.237	34.9335	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	11	2200	3.386	34.926	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	12	2001	3.655	34.9358	✓	✓	✓	✓	✓	✓	✓	4	471	ns	ns	ns	ns
27	13	2001	3.655	34.9358	✓	✓	✓	✓	✓	✓	✓	ns	472	ns	ns	ns	ns
27	14	1799	3.976	34.9581	✓	✓	✓	✓	✓	✓	✓	5	473	ns	ns	ns	ns
27	15	1701	4.113	34.964	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	16	1398	4.823	35.0329	✓	✓	✓	✓	✓	✓	✓	6	474	ns	ns	ns	ns
27	17	1202	5.733	35.1295	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	18	1000	7.479	35.3457	✓	✓	✓	✓	✓	✓	✓	7	475	ns	ns	ns	ns
27	19	900.1	8.464	35.4338	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	20	798.7	9.058	35.4313	✓	✓	✓	✓	✓	✓	✓	8	476	ns	ns	ns	ns
27	21	699.6	9.552	35.3831	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	22	600.3	9.91	35.3443	✓	✓	✓	✓	✓	✓	✓	9	477	ns	ns	ns	ns
27	23	500.2	10.82	35.4517	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	24	399.6	11.37	35.4919	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
27	25	299.5	11.72	35.5149	✓	✓	✓	✓	✓	✓	✓	11	478	ns	ns	ns	ns
27	26	200	12.41	35.6137	✓	✓	✓	✓	✓	✓	✓	12	479	ns	ns	ns	ns
27	27	150.4	12.86	35.6782	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
27	28	100.8	13.11	35.7089	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
27	29	49.9	13.76	35.7398	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
27	30	6.3	17.05	35.637	✓	✓	✓	✓	✓	✓	✓	15	480	ns	ns	ns	ns
28	3	4646	2.567	34.9038	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	4	4500	2.575	34.9064	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	5	4250	2.564	34.9083	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	6	4000	2.555	34.9103	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	7	3751	2.566	34.9141	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	8	3500	2.629	34.9221	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	9	3249	2.725	34.9314	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	10	3001	2.837	34.9385	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	11	2700	3.017	34.942	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	12	2500	3.151	34.9376	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	13	2249	3.376	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	14	2002	3.628	34.9323	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	15	1700	4.022	34.9532	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	16	1400	4.696	35.0216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	17	1199	5.903	35.1908	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	18	1000	7.443	35.3612	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	19	800.4	8.755	35.4199	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	20	800.5	8.756	35.4197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	21	700.4	9.183	35.3418	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	22	601.4	9.849	35.3722	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	23	499.8	10.56	35.4466	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	24	400	10.91	35.4688	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	25	301.4	11.31	35.5004	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	26	198.3	11.62	35.5116	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	27	99.4	11.88	35.538	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	28	50.3	13.4	35.5697	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	29	4.9	17.33	35.5579	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
28	30	4.9	17.33	35.5581	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
29	3	4595	2.588	34.9063	✓	✓	✓	✓	✓	✓	✓	1	247	29-1	101	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
29	4	4595	2.587	34.9062	✓	✓	✓	✓	✓	✓	✓	ns	248	ns	ns	ns	ns
29	5	4500	2.578	34.9067	✓	✓	✓	✓	✓	✓	✓	ns	ns	29-2	102	ns	ns
29	6	4000	2.55	34.9098	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	103	ns	ns
29	7	3502	2.609	34.9202	✓	✓	✓	✓	✓	✓	✓	ns	ns	29-3	ns	ns	ns
29	8	3251	2.711	34.9305	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
29	9	3003	2.861	34.9398	✓	✓	✓	✓	✓	✓	✓	2	249	29-4	104	ns	ns
29	10	2748	3.016	34.9425	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
29	11	2502	3.184	34.9378	✓	✓	✓	✓	✓	✓	✓	ns	ns	29-5	ns	ns	ns
29	12	2250	3.392	34.9316	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	105	ns	ns
29	13	2001	3.613	34.9294	✓	✓	✓	✓	✓	✓	✓	3	250	29-6	ns	ns	ns
29	14	1801	3.869	34.9396	✓	✓	✓	✓	✓	✓	✓	4	251	ns	ns	ns	ns
29	15	1600	4.195	34.9665	✓	✓	✓	✓	✓	✓	✓	ns	ns	29-7	106	ns	ns
29	16	1400	4.997	35.0757	✓	✓	✓	✓	✓	✓	✓	5	252	ns	ns	ns	ns
29	17	1203	6.075	35.2139	✓	✓	✓	✓	✓	✓	✓	6	463	29-8	ns	ns	ns
29	18	999.4	7.392	35.355	✓	✓	✓	✓	✓	✓	✓	7	464	29-9	107	ns	ns
29	19	899.9	8.051	35.3993	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
29	20	801.5	8.514	35.3658	✓	✓	✓	✓	✓	✓	✓	9	465	29-10	ns	ns	ns
29	21	700.3	9.156	35.3663	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	108	ns	ns
29	22	600.9	10.03	35.4144	✓	✓	✓	✓	✓	✓	✓	10	466	29-11	ns	ns	ns
29	23	502.2	10.56	35.4419	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
29	24	401.6	11.08	35.4973	✓	✓	✓	✓	✓	✓	✓	11	467	29-12	109	ns	ns
29	25	300.4	11.31	35.4866	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	110	ns	ns
29	26	201.2	11.68	35.5198	✓	✓	✓	✓	✓	✓	✓	12	1339	29-13	111	ns	ns
29	27	150	11.79	35.5271	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	112	ns	ns
29	28	101.9	11.99	35.5448	✓	✓	✓	✓	✓	✓	✓	13	ns	29-14	113	ns	ns
29	29	50.7	13.82	35.5683	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	114	ns	ns
29	30	4.3	17.06	35.5853	✓	✓	✓	✓	✓	✓	✓	15	1344	29-15	115	ns	ns
30	3	4681	2.583	34.905	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	4	4498	2.576	34.9065	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	5	3998	2.555	34.9104	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	6	3730	2.583	34.9158	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	7	3500	2.65	34.9237	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	8	3250	2.756	34.9335	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	9	3001	2.892	34.9409	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	10	2750	3.066	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	11	2500	3.23	34.9301	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	12	2250	3.414	34.9224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	13	2002	3.726	34.9377	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	14	1802	3.948	34.9453	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	15	1602	4.306	34.977	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	16	1401	4.896	35.0445	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	17	1201	6.233	35.228	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	18	1001	7.776	35.3917	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	19	901.2	8.279	35.3852	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	20	800.3	8.921	35.3771	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	21	700.7	9.499	35.3577	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	22	599.9	10.44	35.449	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	23	500.7	10.85	35.4758	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-1	ns
30	24	400.5	11.35	35.534	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-2	ns
30	25	300	11.54	35.5093	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-3	ns
30	26	199.4	11.78	35.5235	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-4	ns
30	27	150.1	11.94	35.5405	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-5	ns
30	28	100.6	12.3	35.5838	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	30-6	ns
30	29	51.1	13.08	35.5985	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
30	30	4.8	16.86	35.6124	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	3	4587	2.581	34.9059	✓	✓	✓	✓	✓	✓	✓	1	232	ns	ns	ns	ns
31	4	4000	2.567	34.9116	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
31	5	3749	2.594	34.9167	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	6	3499	2.657	34.9244	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	7	3251	2.784	34.9352	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	8	3001	2.93	34.9418	✓	✓	✓	✓	✓	✓	✓	2	233	ns	ns	ns	ns
31	9	2750	3.075	34.9382	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	10	2400	3.327	34.9274	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	11	2250	3.462	34.9268	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	12	1999	3.691	34.9252	✓	✓	✓	✓	✓	✓	✓	3	236	ns	ns	ns	ns
31	13	1999	3.693	34.9251	✓	✓	✓	✓	✓	✓	✓	ns	237	ns	ns	ns	ns
31	14	1801	3.863	34.925	✓	✓	✓	✓	✓	✓	✓	4	238	ns	ns	ns	ns
31	15	1600	4.076	34.9313	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	16	1399	4.397	34.9553	✓	✓	✓	✓	✓	✓	✓	5	239	ns	ns	ns	ns
31	17	1201	5.035	35.0133	✓	✓	✓	✓	✓	✓	✓	6	240	ns	ns	ns	ns
31	18	1100	6.093	35.1553	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	19	1000	6.798	35.2097	✓	✓	✓	✓	✓	✓	✓	7	241	ns	ns	ns	ns
31	20	799.4	9.184	35.4423	✓	✓	✓	✓	✓	✓	✓	8	242	ns	ns	ns	ns
31	21	699.6	9.826	35.4168	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	22	599.1	10.35	35.437	✓	✓	✓	✓	✓	✓	✓	9	243	ns	ns	ns	ns
31	23	500.5	10.94	35.4877	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
31	24	401.2	11.26	35.5039	✓	✓	✓	✓	✓	✓	✓	11	244	ns	ns	ns	ns
31	25	299.8	11.64	35.5187	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	26	200.5	11.82	35.5257	✓	✓	✓	✓	✓	✓	✓	12	245	ns	ns	ns	ns
31	27	150.6	12.03	35.5536	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
31	28	101	12.43	35.6088	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
31	29	50.8	12.73	35.622	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
31	30	4.7	16.27	35.593	✓	✓	✓	✓	✓	✓	✓	15	246	ns	ns	ns	ns
32	3	4578	2.577	34.9056	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	4	4436	2.564	34.906	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	5	3901	2.568	34.9126	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	6	3701	2.6	34.9175	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	7	3502	2.684	34.9265	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	8	3249	2.794	34.9359	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	9	3003	2.938	34.9422	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	10	2501	3.335	34.9312	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	11	2000	3.756	34.9242	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	12	1600	4.143	34.9323	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	13	1400	4.449	34.949	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	14	1300	4.867	34.995	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	15	1200	6.108	35.1935	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	16	1072	7.343	35.3437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	17	1003	6.814	35.1737	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	18	949.7	6.913	35.1333	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	19	850.5	8.88	35.3937	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	20	698.9	9.422	35.2819	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	21	652.1	9.911	35.3448	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	22	601.8	10.3	35.3799	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	23	551	10.44	35.3629	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	24	448.8	10.97	35.4159	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	25	300.7	11.57	35.4722	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	26	203.1	11.87	35.5139	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	27	150.1	12.2	35.5558	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	28	97.3	12.76	35.653	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	29	51.7	14.4	35.5504	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
32	30	5.4	16.09	35.636	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
33	3	4589	2.56	34.9037	✓	✓	✓	✓	✓	✓	✓	1	231	33-1	ns	ns	ns
33	4	4000	2.579	34.9126	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	116	ns	ns
33	5	3749	2.602	34.9173	✓	✓	✓	✓	✓	✓	✓	ns	ns	33-2	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
33	6	3500	2.71	34.9286	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
33	7	3250	2.83	34.9379	✓	✓	✓	✓	✓	✓	✓	ns	ns	33-3	117	ns	ns
33	8	3000	3	34.9418	✓	✓	✓	✓	✓	✓	✓	2	219	ns	ns	ns	ns
33	9	2750	3.136	34.934	✓	✓	✓	✓	✓	✓	✓	ns	ns	33-4	ns	ns	ns
33	10	2400	3.355	34.922	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	118	ns	ns
33	11	2250	3.492	34.9224	✓	✓	✓	✓	✓	✓	✓	ns	ns	33-5	ns	ns	ns
33	12	2100	3.633	34.923	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
33	13	2001	3.733	34.9262	✓	✓	✓	✓	✓	✓	✓	3	220	33-6	119	ns	ns
33	14	1800	3.97	34.9383	✓	✓	✓	✓	✓	✓	✓	4	221	33-7	ns	ns	ns
33	15	1800	3.971	34.9386	✓	✓	✓	✓	✓	✓	✓	ns	222	ns	ns	ns	ns
33	16	1601	4.349	34.9725	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
33	17	1399	4.915	35.028	✓	✓	✓	✓	✓	✓	✓	5	226	33-8	120	ns	ns
33	18	1201	5.704	35.0881	✓	✓	✓	✓	✓	✓	✓	6	223	33-9	ns	ns	ns
33	19	1002	8.152	35.4062	✓	✓	✓	✓	✓	✓	✓	7	224	ns	121	ns	ns
33	20	801.8	9.382	35.3507	✓	✓	✓	✓	✓	✓	✓	8	225	33-10	122	ns	ns
33	21	700.8	10.23	35.4095	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
33	22	600.7	10.66	35.4177	✓	✓	✓	✓	✓	✓	✓	9	227	33-11	ns	ns	ns
33	23	501.8	11.38	35.5311	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	123	ns	ns
33	24	401.1	11.5	35.4981	✓	✓	✓	✓	✓	✓	✓	11	228	ns	124	ns	ns
33	25	303	11.76	35.5152	✓	✓	✓	✓	✓	✓	✓	ns	ns	33-12	125	ns	ns
33	26	200.8	12.04	35.5475	✓	✓	✓	✓	✓	✓	✓	12	229	33-13	126	ns	ns
33	27	150.8	12.48	35.6105	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	127	ns	ns
33	28	101.7	12.79	35.6621	✓	✓	✓	✓	✓	✓	✓	13	ns	33-14	128	ns	ns
33	29	51.2	13.37	35.6325	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	129	ns	ns
33	30	4.6	16.1	35.6431	✓	✓	✓	✓	✓	✓	✓	15	230	33-15	130	ns	ns
34	3	4420	2.545	34.9044	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	4	4000	2.556	34.9105	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	5	3750	2.579	34.9153	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	6	3502	2.639	34.9232	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	7	3249	2.77	34.9352	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	8	3001	2.903	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	9	2750	3.065	34.9388	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	10	2501	3.23	34.9306	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	11	2251	3.422	34.9237	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	12	1999	3.679	34.9305	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	13	1800	3.899	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	14	1601	4.201	34.9536	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	15	1400	4.488	34.9682	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	16	1199	5.132	35.0261	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	17	999.8	6.474	35.1623	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	18	901.1	6.516	35.0567	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	19	800.7	8.518	35.2954	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	20	698.8	8.979	35.2407	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	21	600.4	9.595	35.2602	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	22	501	10.15	35.2772	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-1	ns
34	23	400.7	10.61	35.3139	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-2	ns
34	24	299.4	11.44	35.4483	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-3	ns
34	25	200.3	12.03	35.5398	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-4	ns
34	26	149	12.5	35.6126	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-5	ns
34	27	100.1	12.75	35.6439	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	34-6	ns
34	28	49.3	14.63	35.6754	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
34	29	5.9	15.66	35.6186	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	34-1
34	30	5.9	15.66	35.6185	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	3	4528	2.552	34.9037	✓	✓	✓	✓	✓	✓	✓	1	1803	ns	ns	ns	ns
35	4	4001	2.588	34.9134	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	5	3748	2.613	34.9183	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	6	3500	2.672	34.9259	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
35	7	3251	2.774	34.9353	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	8	3002	2.913	34.9418	✓	✓	✓	✓	✓	✓	✓	2	1805	ns	ns	ns	ns
35	9	2750	3.056	34.9384	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	10	2501	3.197	34.9314	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	11	2250	3.439	34.9309	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	12	2001	3.677	34.9289	✓	✓	✓	✓	✓	✓	✓	3	1806	ns	ns	ns	ns
35	13	1802	3.907	34.9296	✓	✓	✓	✓	✓	✓	✓	4	1807	ns	ns	ns	ns
35	14	1598	4.191	34.9444	✓	✓	✓	✓	✓	✓	✓	5	1808	ns	ns	ns	ns
35	15	1402	4.58	34.9754	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	16	1202	5.584	35.1026	✓	✓	✓	✓	✓	✓	✓	6	1809	ns	ns	ns	ns
35	17	1202	5.585	35.1027	✓	✓	✓	✓	✓	✓	✓	ns	211	ns	ns	ns	ns
35	18	1003	6.426	35.129	✓	✓	✓	✓	✓	✓	✓	7	218	ns	ns	ns	ns
35	19	899.2	7.495	35.2092	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	20	802.2	8.323	35.2385	✓	✓	✓	✓	✓	✓	✓	8	213	ns	ns	ns	ns
35	21	700.3	8.939	35.2218	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	22	601.6	9.774	35.2806	✓	✓	✓	✓	✓	✓	✓	9	214	ns	ns	ns	ns
35	23	502.4	10.48	35.3505	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
35	24	400.8	11.14	35.4392	✓	✓	✓	✓	✓	✓	✓	11	215	ns	ns	ns	ns
35	25	300.7	11.58	35.4845	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	26	199.1	11.92	35.5303	✓	✓	✓	✓	✓	✓	✓	12	216	ns	ns	ns	ns
35	27	149.3	12.17	35.5606	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
35	28	101.1	12.45	35.5971	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
35	29	50.7	13.01	35.6025	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
35	30	6.2	15.33	35.6362	✓	✓	✓	✓	✓	✓	✓	15	217	ns	ns	ns	ns
36	3	4406	2.527	34.903	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	4	4001	2.56	34.9108	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	5	3747	2.599	34.9169	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	6	3501	2.677	34.9262	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	7	3248	2.793	34.9356	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	8	3001	2.954	34.9423	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	9	2750	3.144	34.938	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	10	2499	3.308	34.9268	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	11	2246	3.453	34.9215	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	12	2000	3.678	34.923	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	13	1802	3.856	34.9231	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	14	1609	4.156	34.9513	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	15	1401	4.303	34.941	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	16	1200	5.074	35.0197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	17	1000	7.179	35.284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	18	902.4	7.324	35.1985	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	19	797.9	7.792	35.1555	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	20	700.8	8.826	35.2107	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	21	601.1	9.425	35.2192	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	22	499	10.31	35.3117	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	23	400.3	11.01	35.393	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	24	302.7	11.58	35.4721	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	25	200.2	12.06	35.5488	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	26	149.5	12.51	35.6182	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	27	98.6	13.04	35.7074	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	28	51.3	14.48	35.6708	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	29	5.9	15.22	35.6193	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
36	30	6.3	15.22	35.6192	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
37	3	4151	2.595	34.9121	✓	✓	✓	✓	✓	✓	✓	1	1789	37-1	ns	ns	ns
37	4	4120	2.592	34.9122	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	131	ns	ns
37	5	3747	2.638	34.9205	✓	✓	✓	✓	✓	✓	✓	ns	ns	37-2	ns	ns	ns
37	6	3502	2.699	34.9282	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
37	7	3250	2.844	34.939	✓	✓	✓	✓	✓	✓	✓	ns	ns	37-3	132	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
37	8	3001	2.988	34.9419	✓	✓	✓	✓	✓	✓	✓	2	1790	ns	ns	ns	ns
37	9	2751	3.123	34.9353	✓	✓	✓	✓	✓	✓	✓	ns	ns	37-4	ns	ns	ns
37	10	2501	3.254	34.927	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	133	ns	ns
37	11	2475	3.277	34.9257	✓	✓	✓	✓	✓	✓	✓	ns	ns	37-5	ns	ns	ns
37	12	2250	3.466	34.9222	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
37	13	2000	3.712	34.9267	✓	✓	✓	✓	✓	✓	✓	3	1791	37-6	134	ns	ns
37	14	1800	3.901	34.9287	✓	✓	✓	✓	✓	✓	✓	4	1794	ns	135	ns	ns
37	15	1600	4.091	34.9327	✓	✓	✓	✓	✓	✓	✓	ns	ns	37-7	ns	ns	ns
37	16	1401	4.451	34.9632	✓	✓	✓	✓	✓	✓	✓	5	1793	ns	ns	ns	ns
37	17	1201	5.11	35.0297	✓	✓	✓	✓	✓	✓	✓	6	1795	37-8	136	ns	ns
37	18	1002	6.262	35.1193	✓	✓	✓	✓	✓	✓	✓	7	1796	37-9	137	ns	ns
37	19	902.4	6.697	35.0923	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
37	20	799.3	7.378	35.0705	✓	✓	✓	✓	✓	✓	✓	8	1797	37-10	138	ns	ns
37	21	700.7	8.402	35.1315	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
37	22	600.7	9.651	35.2757	✓	✓	✓	✓	✓	✓	✓	9	1798	37-11	ns	ns	ns
37	23	499	10.43	35.3391	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	139	ns	ns
37	24	400.8	11.04	35.4047	✓	✓	✓	✓	✓	✓	✓	11	1799	37-12	140	ns	ns
37	25	301.7	11.46	35.4506	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	141	ns	ns
37	26	200.3	11.77	35.5012	✓	✓	✓	✓	✓	✓	✓	12	1800	37-13	142	ns	ns
37	27	150.6	11.96	35.5186	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
37	28	101	12.57	35.5883	✓	✓	✓	✓	✓	✓	✓	13	ns	37-14	143	ns	ns
37	29	50.8	14.53	35.6021	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	144	ns	ns
37	30	8.4	15.1	35.5714	✓	✓	✓	✓	✓	✓	✓	15	1801	37-15	145	ns	ns
38	3	4410	2.557	34.9057	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	4	4251	2.578	34.9097	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	5	4002	2.59	34.9135	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	6	3750	2.643	34.921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	7	3502	2.732	34.931	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	8	3249	2.838	34.939	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	9	3001	2.976	34.9419	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	10	2750	3.123	34.9362	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	11	2501	3.28	34.9269	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	12	2251	3.478	34.9222	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	13	2002	3.719	34.9269	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	14	1801	3.921	34.9321	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	15	1599	4.065	34.9251	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	16	1398	4.374	34.9456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	17	1201	5.03	35.0103	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	18	1001	6.229	35.1035	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	19	900.8	6.39	35.0171	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	20	800.2	8.237	35.2539	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	21	701.2	9.043	35.2671	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	22	601.9	10.11	35.3758	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
38	23	499.7	10.54	35.378	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-1	ns
38	24	401.9	11.49	35.5356	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-2	ns
38	25	302.2	11.51	35.4652	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-3	ns
38	26	199.9	11.82	35.5132	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-4	ns
38	27	151.1	12.09	35.548	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-5	ns
38	28	100.4	12.54	35.6106	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	38-6	38-1B
38	29	49.3	14.69	35.5538	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	3	4296	2.585	34.9097	✓	✓	✓	✓	✓	✓	✓	1	1775	ns	ns	ns	ns
39	4	3999	2.593	34.9138	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	5	3748	2.625	34.9195	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	6	3499	2.726	34.9307	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	7	3250	2.833	34.9395	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	8	3000	2.946	34.942	✓	✓	✓	✓	✓	✓	✓	2	1776	ns	ns	ns	ns
39	9	2750	3.114	34.9353	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
39	10	2500	3.26	34.9273	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	11	2248	3.458	34.9219	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	12	1999	3.665	34.9222	✓	✓	✓	✓	✓	✓	✓	3	1777	ns	ns	ns	ns
39	13	1801	3.801	34.9223	✓	✓	✓	✓	✓	✓	✓	4	1778	ns	ns	ns	ns
39	14	1601	3.982	34.9253	✓	✓	✓	✓	✓	✓	✓	5	1779	ns	ns	ns	ns
39	15	1401	4.12	34.9198	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	16	1250	4.726	34.9949	✓	✓	✓	✓	✓	✓	✓	6	1781	ns	ns	ns	ns
39	17	1001	5.746	35.0701	✓	✓	✓	✓	✓	✓	✓	7	1782	ns	ns	ns	ns
39	18	1000	5.747	35.0699	✓	✓	✓	✓	✓	✓	✓	ns	1783	ns	ns	ns	ns
39	19	900.4	6.503	35.1248	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	20	800.2	8.097	35.3187	✓	✓	✓	✓	✓	✓	✓	8	1784	ns	ns	ns	ns
39	21	700.4	8.143	35.1704	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	22	598.9	9.849	35.3474	✓	✓	✓	✓	✓	✓	✓	9	1786	ns	ns	ns	ns
39	23	499.8	10.31	35.3389	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
39	24	401.3	10.83	35.3708	✓	✓	✓	✓	✓	✓	✓	11	1787	ns	ns	ns	ns
39	25	300.2	11.25	35.416	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	26	201.3	11.84	35.5156	✓	✓	✓	✓	✓	✓	✓	12	1788	ns	ns	ns	ns
39	27	150	12.31	35.583	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
39	28	95.9	12.64	35.5938	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
39	29	49.7	15.21	35.6496	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	ns	ns	ns
39	30	7	15.32	35.6374	✓	✓	✓	✓	✓	✓	✓	15	1802	ns	ns	ns	ns
40	3	4061	2.612	34.9149	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	4	3751	2.635	34.9204	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	5	3502	2.723	34.9308	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	6	3249	2.829	34.9402	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	7	3002	2.932	34.9435	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	8	2749	3.071	34.9377	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	9	2501	3.199	34.9285	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	10	2249	3.359	34.9229	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	11	2001	3.555	34.9218	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	12	1802	3.713	34.9228	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	13	1600	3.851	34.9193	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	14	1401	3.976	34.9185	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	15	1201	4.302	34.9455	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	16	1003	5.185	35.0472	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	17	900.7	5.391	35.0321	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	18	799.7	5.932	35.0594	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	19	700.3	6.502	35.059	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	20	600.5	7.154	35.0298	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	21	500	8.148	35.0445	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	22	399.3	8.498	35.0222	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	23	302.2	9.472	35.1489	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	24	201.1	10.01	35.2282	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	25	151	10.46	35.2808	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	26	102.1	11.14	35.343	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	27	52.7	12.84	35.382	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
40	28	5	13.87	35.2688	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
41	3	4196	2.602	34.9122	✓	✓	✓	✓	✓	✓	✓	1	1769	41-1	ns	ns	ns
41	4	3750	2.636	34.9205	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	146	ns	ns
41	5	3502	2.709	34.9302	✓	✓	✓	✓	✓	✓	✓	ns	ns	41-2	ns	ns	ns
41	6	3252	2.789	34.9382	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
41	7	2988	2.916	34.9444	✓	✓	✓	✓	✓	✓	✓	2	1770	41-3	147	ns	ns
41	8	2750	3.053	34.9406	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
41	9	2503	3.199	34.9313	✓	✓	✓	✓	✓	✓	✓	ns	ns	41-4	ns	ns	ns
41	10	2251	3.357	34.924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	148	ns	ns
41	11	2251	3.357	34.924	✓	✓	✓	✓	✓	✓	✓	ns	ns	41-5	ns	ns	ns
41	12	2000	3.529	34.9224	✓	✓	✓	✓	✓	✓	✓	3	1771	ns	149	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
41	13	1802	3.681	34.9228	✓	✓	✓	✓	✓	✓	✓	4	1772	41-6	ns	ns	ns
41	14	1601	3.84	34.9205	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	150	ns	ns
41	15	1402	3.953	34.9168	✓	✓	✓	✓	✓	✓	✓	5	1773	41-7	ns	ns	ns
41	16	1201	4.157	34.9235	✓	✓	✓	✓	✓	✓	✓	6	1774	ns	152	ns	ns
41	17	999.4	4.713	34.9791	✓	✓	✓	✓	✓	✓	✓	7	2104	41-8	152	ns	ns
41	18	899.8	5.252	35.0418	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
41	19	800	5.491	35.0276	✓	✓	✓	✓	✓	✓	✓	8	2105	41-9	153	ns	ns
41	20	699.9	5.926	35.0197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
41	21	599.9	6.222	34.9564	✓	✓	✓	✓	✓	✓	✓	9	2106	41-10	154	ns	ns
41	22	499.6	6.891	34.917	✓	✓	✓	✓	✓	✓	✓	10	ns	41-11	ns	41-1	ns
41	23	400.1	8.111	35.0017	✓	✓	✓	✓	✓	✓	✓	11	ns	41-12	155	41-2	ns
41	24	300.1	9.177	35.1066	✓	✓	✓	✓	✓	✓	✓	ns	2107	ns	156	41-3	ns
41	25	200.7	9.897	35.2015	✓	✓	✓	✓	✓	✓	✓	12	2108	41-13	157	41-4	ns
41	26	149.7	10.54	35.2976	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	41-5	ns
41	27	100.9	11.07	35.3331	✓	✓	✓	✓	✓	✓	✓	13	ns	41-14	158	41-6	41-1B
41	28	50.3	13.38	35.3447	✓	✓	✓	✓	✓	✓	✓	14	ns	ns	159	ns	ns
41	29	4.7	14.01	35.296	✓	✓	✓	✓	✓	✓	✓	15	2109	41-15	160	ns	ns
41	30	4.7	14.01	35.296	✓	✓	✓	✓	ns	ns	ns	ns	1768	ns	ns	ns	ns
42	3	3787	2.581	34.9147	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	4	3500	2.681	34.9276	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	5	3249	2.771	34.9372	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	6	3001	2.918	34.9437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	7	2750	3.05	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	8	2500	3.186	34.9309	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	9	2250	3.335	34.9246	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	10	2000	3.528	34.9217	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	11	1800	3.698	34.9231	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	12	1599	3.86	34.9239	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	13	1400	4.027	34.9272	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	14	1201	4.286	34.9414	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	15	1001	4.926	35.0064	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	16	899.7	5.238	35.0307	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	17	800.4	5.798	35.0765	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	18	701.1	6.265	35.0784	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	19	601	6.786	35.0673	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	20	498.8	7.772	35.0904	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	21	400.5	8.504	35.1098	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	22	300.2	8.936	35.1043	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	23	200.8	9.521	35.1627	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	24	150	9.884	35.1998	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	25	99.8	10.22	35.2068	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	26	50.3	11.5	35.224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
42	27	6.1	13.76	35.229	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	3	3975	2.622	34.9168	✓	✓	✓	✓	✓	✓	✓	1	2110	ns	ns	ns	ns
43	4	3750	2.624	34.9195	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	5	3498	2.683	34.9279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	6	3250	2.767	34.9364	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	7	3000	2.929	34.9432	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	8	2749	3.054	34.9408	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	9	2501	3.206	34.9311	✓	✓	✓	✓	✓	✓	✓	2	2111	ns	ns	ns	ns
43	10	2249	3.379	34.9247	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	11	2000	3.567	34.9236	✓	✓	✓	✓	✓	✓	✓	3	2112	ns	ns	ns	ns
43	12	2000	3.568	34.9236	✓	✓	✓	✓	✓	✓	✓	ns	2113	ns	ns	ns	ns
43	13	1800	3.731	34.9233	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	14	1601	3.887	34.9204	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	15	1400	4.02	34.9203	✓	✓	✓	✓	✓	✓	✓	4	2114	ns	ns	ns	ns
43	16	1201	4.31	34.9427	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
43	17	1001	4.905	34.9907	✓	✓	✓	✓	✓	✓	✓	6	2115	ns	ns	ns	ns
43	18	892.3	5.232	34.9984	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	19	800.2	5.804	35.0449	✓	✓	✓	✓	✓	✓	✓	7	2116	ns	ns	ns	ns
43	20	699.8	6.184	35.0178	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	21	645	7.098	35.1174	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
43	22	599.3	7.331	35.1155	✓	✓	✓	✓	✓	✓	✓	8	2117	ns	ns	ns	ns
43	23	501	8	35.0863	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	43-1	ns
43	24	400.6	8.635	35.0945	✓	✓	✓	✓	✓	✓	✓	10	2118	ns	ns	43-2	ns
43	25	298.9	9.193	35.1276	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	43-3	ns
43	26	201.5	9.513	35.1598	✓	✓	✓	✓	✓	✓	✓	11	2119	ns	ns	43-4	ns
43	27	149.1	9.686	35.1786	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	43-5	ns
43	28	100.4	9.986	35.2079	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	43-6	43-1B
43	29	50	10.54	35.2327	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
43	30	6.2	13.46	35.2281	✓	✓	✓	✓	✓	✓	✓	14	2120	ns	ns	ns	ns
44	3	3289	2.716	34.9319	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	4	3202	2.788	34.9377	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	5	2999	2.898	34.943	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	6	2752	3.046	34.9406	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	7	2502	3.17	34.9333	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	8	2251	3.355	34.9238	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	9	2001	3.602	34.9224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	10	1799	3.76	34.9234	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	11	1600	3.944	34.9279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	12	1400	4.112	34.929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	13	1199	4.378	34.9449	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	14	1002	5.212	35.0279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	15	899	5.889	35.0974	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	16	800.3	6.278	35.0799	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	17	701.3	7.021	35.0976	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	18	600.9	7.509	35.0673	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	19	498.4	8.512	35.1162	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	20	423.1	8.438	35.0393	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	21	300.3	9.475	35.1668	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	22	200.4	9.661	35.1932	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	23	159	9.612	35.1776	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	24	99.2	10.02	35.197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	25	49.2	10.99	35.22	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
44	26	4.9	13.46	35.1981	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
45	3	3907	2.552	34.9108	✓	✓	✓	✓	✓	✓	✓	1	2121	45-1	ns	ns	ns
45	4	3750	2.626	34.92	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	161	ns	ns
45	5	3500	2.733	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-2	ns	ns	ns
45	6	3249	2.843	34.9459	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
45	7	3001	2.952	34.949	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-3	162	ns	ns
45	8	2750	3.086	34.9392	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
45	9	2499	3.231	34.9301	✓	✓	✓	✓	✓	✓	✓	2	2122	45-4	163	ns	ns
45	10	2250	3.432	34.9252	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
45	11	2002	3.614	34.9229	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-5	164	ns	ns
45	12	1802	3.774	34.9233	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
45	13	1600	3.938	34.9241	✓	✓	✓	✓	✓	✓	✓	3	2123	45-6	ns	ns	ns
45	14	1600	3.938	34.9241	✓	✓	✓	✓	✓	✓	✓	ns	2124	ns	ns	ns	ns
45	15	1401	4.091	34.9252	✓	✓	✓	✓	✓	✓	✓	ns	2125	45-7	165	ns	ns
45	16	1201	4.55	34.9644	✓	✓	✓	✓	✓	✓	✓	4	ns	45-8	ns	ns	ns
45	17	1001	5.285	35.0293	✓	✓	✓	✓	✓	✓	✓	5	2126	ns	166	ns	ns
45	18	900.1	5.694	35.0437	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-9	ns	ns	ns
45	19	800.6	6.504	35.0986	✓	✓	✓	✓	✓	✓	✓	6	2127	ns	167	ns	ns
45	20	701.4	7.227	35.1016	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-10	ns	ns	ns
45	21	600.4	7.841	35.0813	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	168	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
45	22	498.9	8.627	35.1109	✓	✓	✓	✓	✓	✓	✓	ns	ns	45-11	ns	45-1	ns
45	23	470.9	8.559	35.0679	✓	✓	✓	✓	✓	✓	✓	8	2128	ns	ns	45-2	ns
45	24	400.7	9.314	35.1795	✓	✓	✓	✓	✓	✓	✓	9	ns	45-12	169	45-3	ns
45	25	300.6	9.748	35.2149	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	170	45-4	ns
45	26	199.4	9.685	35.1973	✓	✓	✓	✓	✓	✓	✓	10	2129	45-13	171	45-5	ns
45	27	150.3	9.637	35.1821	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	172	45-6	ns
45	28	100.6	10.03	35.2034	✓	✓	✓	✓	✓	✓	✓	11	ns	45-14	173	45-7	45-1B
45	29	48.8	10.62	35.1908	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	174	ns	ns
45	30	4.1	13.33	35.1884	✓	✓	✓	✓	✓	✓	✓	13	2130	45-15	175	ns	ns
46	3	3965	2.59	34.9142	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	4	3750	2.653	34.9233	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	5	3498	2.788	34.94	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	6	3248	2.868	34.9495	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	7	2998	2.96	34.9481	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	8	2749	3.092	34.9426	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	9	2501	3.218	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	10	2250	3.353	34.9268	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	11	2000	3.53	34.9259	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	12	1802	3.68	34.9259	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	13	1603	3.811	34.9217	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	14	1401	3.919	34.9157	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	15	1190	4.179	34.9327	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	16	1001	4.529	34.9605	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	17	901.1	4.839	34.9835	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	18	801.3	4.987	34.9638	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	19	701.8	5.469	34.9853	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	20	601.9	5.28	34.8499	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	21	502.1	6.912	34.9847	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	22	400.8	7.916	35.0147	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	23	300.7	8.493	35.0207	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	24	201.9	9.232	35.1122	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	25	150.1	9.61	35.1661	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	26	98.9	10.34	35.251	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	27	52.5	11.23	35.2956	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
46	28	5.9	12.84	35.0621	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	3	3648	2.513	34.9099	✓	✓	✓	✓	✓	✓	✓	1	2131	ns	ns	ns	ns
47	4	3499	2.583	34.9188	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	5	3251	2.734	34.9365	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	6	3000	2.85	34.945	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	7	2750	3.01	34.9485	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	8	2501	3.137	34.9382	✓	✓	✓	✓	✓	✓	✓	2	2132	ns	ns	ns	ns
47	9	2250	3.261	34.9292	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	10	2001	3.413	34.9239	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	11	1799	3.548	34.9227	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	12	1600	3.714	34.9236	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	13	1400	3.863	34.9235	✓	✓	✓	✓	✓	✓	✓	3	2133	ns	ns	ns	ns
47	14	1200	4.017	34.9269	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
47	15	1000	4.349	34.954	✓	✓	✓	✓	✓	✓	✓	5	2134	ns	ns	ns	ns
47	16	1000	4.349	34.9542	✓	✓	✓	✓	✓	✓	✓	ns	2135	ns	ns	ns	ns
47	17	899.4	4.557	34.9708	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	18	801.5	4.898	35.0022	✓	✓	✓	✓	✓	✓	✓	6	2136	ns	ns	ns	ns
47	19	699.4	5.076	35.0013	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
47	20	600	5.759	35.0688	✓	✓	✓	✓	✓	✓	✓	7	2137	ns	ns	ns	ns
47	21	498.9	5.385	34.922	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	47-1	ns
47	22	447.7	5.519	34.8831	✓	✓	✓	✓	✓	✓	✓	9	2138	ns	ns	47-2	ns
47	23	350.6	6.391	34.8966	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	47-3	ns
47	24	279.4	6.794	34.8696	✓	✓	✓	✓	✓	✓	✓	11	2139	ns	ns	47-4	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
47	25	198.9	7.462	34.9096	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	47-5	ns
47	26	149.5	7.923	34.9459	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	47-6	ns
47	27	101.1	8.713	35.0159	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	47-7	47-1B
47	28	49.9	10.06	35.0353	✓	✓	✓	✓	✓	✓	✓	13	ns	ns	ns	ns	ns
47	29	5.7	12.47	35.032	✓	✓	✓	✓	✓	✓	✓	14	2140	ns	ns	ns	ns
48	3	3665	2.663	34.9263	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	4	3501	2.749	34.9373	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	5	3248	2.875	34.9479	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	6	3000	2.999	34.9488	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	7	2750	3.13	34.9406	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	8	2500	3.25	34.932	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	9	2250	3.381	34.9253	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	10	1998	3.561	34.9235	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	11	1799	3.699	34.9237	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	12	1602	3.824	34.9201	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	13	1399	3.892	34.9113	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	14	1202	4.027	34.9133	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	15	999.5	4.28	34.9285	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	16	891.7	4.457	34.9343	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	17	802.9	4.724	34.9499	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	18	700.2	5.084	34.9556	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	19	600.3	5.511	34.9311	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	20	477.3	6.308	34.9008	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	21	401.3	7.163	34.9576	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	22	294.9	7.816	34.9489	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	23	200.9	8.437	35.008	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	24	151.7	9.07	35.0879	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	25	101.5	9.665	35.1613	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	26	51	10.43	35.2641	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
48	27	5	11.86	35.0185	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
49	3	3575	2.674	34.9279	✓	✓	✓	✓	✓	✓	✓	1	163	49-1	ns	ns	ns
49	4	3250	2.817	34.9464	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	176	ns	ns
49	5	3000	2.934	34.9505	✓	✓	✓	✓	✓	✓	✓	ns	ns	49-2	ns	ns	ns
49	6	2749	3.055	34.9452	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
49	7	2501	3.181	34.9356	✓	✓	✓	✓	✓	✓	✓	2	164	49-3	177	ns	ns
49	8	2250	3.342	34.929	✓	✓	✓	✓	✓	✓	✓	ns	ns	49-4	ns	ns	ns
49	9	2001	3.502	34.9244	✓	✓	✓	✓	✓	✓	✓	ns	ns	49-5	178	ns	ns
49	10	1801	3.68	34.9238	✓	✓	✓	✓	✓	✓	✓	3	ns	49-6	179	ns	ns
49	11	1601	3.797	34.9208	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	180	ns	ns
49	12	1400	3.868	34.9107	✓	✓	✓	✓	✓	✓	✓	4	165	49-7	181	ns	ns
49	13	1201	3.984	34.9088	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
49	14	1000	4.223	34.9178	✓	✓	✓	✓	✓	✓	✓	5	166	49-8	182	ns	ns
49	15	900.1	4.52	34.9416	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
49	16	800.1	4.776	34.9509	✓	✓	✓	✓	✓	✓	✓	6	168	49-9	183	ns	ns
49	17	699.6	5.03	34.9436	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
49	18	600.1	5.807	34.9825	✓	✓	✓	✓	✓	✓	✓	7	2141	49-10	ns	ns	ns
49	19	600.3	5.807	34.9826	✓	✓	✓	✓	✓	✓	✓	ns	2142	ns	184	ns	ns
49	20	460.3	6.317	34.86	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	49-1	ns
49	21	400.1	6.998	34.8804	✓	✓	✓	✓	✓	✓	✓	8	2143	49-11	185	49-2	ns
49	22	299.7	7.657	34.9071	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	186	49-3	ns
49	23	201.6	8.434	35.0023	✓	✓	✓	✓	✓	✓	✓	10	2144	49-12	187	49-4	ns
49	24	149	9.223	35.115	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	49-5	ns
49	25	101.2	9.502	35.1421	✓	✓	✓	✓	✓	✓	✓	11	ns	49-13	188	49-6	ns
49	26	50.6	10.25	35.0628	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	189	ns	ns
49	27	5.3	12.02	34.9847	✓	✓	✓	✓	✓	✓	✓	13	2145	49-14	190	ns	49-1B
50	3	3630	2.793	34.9467	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	4	3482	2.824	34.9507	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
50	5	3249	2.893	34.9556	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	6	2998	2.947	34.9525	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	7	2749	3.119	34.953	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	8	2500	3.225	34.9386	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	9	2248	3.329	34.9259	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	10	2001	3.532	34.9262	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	11	1798	3.681	34.9236	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	12	1601	3.793	34.9177	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	13	1400	3.865	34.9107	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	14	1200	4.029	34.9154	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	15	999	4.313	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	16	800	4.774	34.9674	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	18	699.9	4.92	34.9424	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	19	600	5.563	34.9785	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	20	472.9	6.177	34.941	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	21	421.8	6.475	34.9148	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	22	299	7.842	34.9813	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	23	200.5	8.881	35.0944	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	24	150.6	9.371	35.1395	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	25	97.9	9.594	35.1563	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	26	51.3	10.52	35.2676	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
50	27	4.5	12.22	35.0754	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	3	3081	2.716	34.9314	✓	✓	✓	✓	✓	✓	✓	1	151	ns	ns	ns	ns
51	4	3000	2.83	34.9393	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	5	2748	2.999	34.9454	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	6	2499	3.149	34.9416	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	7	2250	3.269	34.9312	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	8	2001	3.425	34.9272	✓	✓	✓	✓	✓	✓	✓	2	153	ns	ns	ns	ns
51	9	1800	3.579	34.9249	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	10	1601	3.73	34.9238	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
51	11	1400	3.853	34.922	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	12	1200	3.984	34.9216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	13	1000	4.217	34.9343	✓	✓	✓	✓	✓	✓	✓	4	154	ns	ns	ns	ns
51	14	898.9	4.375	34.9459	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	15	800.7	4.554	34.9556	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
51	16	700	4.516	34.9284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
51	17	601.1	4.721	34.9169	✓	✓	✓	✓	✓	✓	✓	6	155	ns	ns	ns	ns
51	18	499.9	5.021	34.8924	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	51-1	ns
51	19	401.3	5.649	34.8915	✓	✓	✓	✓	✓	✓	✓	8	156	ns	ns	51-2	ns
51	20	303	6.228	34.8496	✓	ns	✓	✓	✓	✓	✓	9	158	ns	ns	51-3	ns
51	21	303	6.23	34.8497	✓	✓	✓	✓	✓	✓	✓	ns	159	ns	ns	51-4	ns
51	22	200.4	7.206	34.8838	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	51-5	ns
51	23	149	7.652	34.92	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	51-6	ns
51	24	98.6	8.267	34.9699	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	51-7	ns
51	25	49.9	9.815	34.9702	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	ns	ns
51	26	5.3	11.8	34.929	✓	✓	✓	✓	✓	✓	✓	13	160	ns	ns	ns	51-1B
52	3	3093	2.847	34.9469	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	4	3002	2.883	34.9509	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	5	2750	2.99	34.9527	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	6	2501	3.149	34.9413	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	7	2250	3.304	34.9307	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	8	2001	3.424	34.9257	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	9	1801	3.542	34.9238	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	10	1602	3.688	34.9237	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	11	1402	3.812	34.9203	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	12	1202	3.891	34.9108	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	13	1001	4.056	34.9177	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
52	14	898.9	4.222	34.9313	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	15	799.8	4.496	34.9511	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	16	699.8	4.82	34.9753	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	17	602.1	5.191	34.9972	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	18	500.2	5.496	34.9827	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	19	401.4	5.632	34.8933	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	20	301.5	6.078	34.8158	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	21	201.2	6.921	34.8366	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	22	149.6	7.05	34.8416	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	23	99.8	7.572	34.8713	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	24	51.6	8.864	34.9067	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
52	25	4.7	11.37	34.8088	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	3	3663	2.799	34.9521	✓	✓	✓	✓	✓	✓	✓	1	145	53-1	ns	ns	ns
53	4	3663	2.799	34.952	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	5	3550	2.8	34.9508	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-2	191	ns	ns
53	6	3419	2.81	34.9501	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	7	3259	2.84	34.9506	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-3	192	ns	ns
53	8	3000	2.939	34.9557	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-4	ns	ns	ns
53	9	2750	3.073	34.9573	✓	✓	✓	✓	✓	✓	✓	2	146	ns	ns	ns	ns
53	10	2500	3.15	34.942	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-5	193	ns	ns
53	11	2249	3.273	34.9294	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	12	2001	3.414	34.9256	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-6	194	ns	ns
53	13	1801	3.576	34.9253	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-7	ns	ns	ns
53	14	1600	3.706	34.9237	✓	✓	✓	✓	✓	✓	✓	3	147	ns	ns	ns	ns
53	15	1401	3.836	34.9195	✓	✓	✓	✓	✓	✓	✓	ns	ns	53-8	195	ns	ns
53	16	1200	3.967	34.9179	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	17	1000	4.135	34.9226	✓	✓	✓	✓	✓	✓	✓	4	148	53-9	196	ns	ns
53	18	900.6	4.237	34.9233	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
53	19	799.6	4.38	34.9322	✓	✓	✓	✓	✓	✓	✓	5	ns	53-10	ns	ns	ns
53	20	700.2	4.529	34.9286	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	197	ns	ns
53	21	599.6	4.733	34.927	✓	✓	✓	✓	✓	✓	✓	6	149	53-11	ns	ns	ns
53	22	499.2	5.002	34.9072	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	198	53-1	ns
53	23	400.7	5.461	34.8792	✓	✓	✓	✓	✓	✓	✓	8	150	53-12	199	53-2	ns
53	24	313.6	5.671	34.7901	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	200	53-3	ns
53	25	200	7.015	34.8661	✓	✓	✓	✓	✓	✓	✓	10	161	53-13	201	53-4	ns
53	26	150.4	7.553	34.9101	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	53-5	ns
53	27	100.4	8.343	34.9534	✓	✓	✓	✓	✓	✓	✓	11	ns	53-14	202	53-6	ns
53	28	50.8	11.28	35.0332	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	203	ns	ns
53	29	4.5	11.86	34.9813	✓	✓	✓	✓	✓	✓	✓	13	162	53-15	204	ns	53-1B
54	3	3424	2.821	34.9689	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	4	3300	2.815	34.9625	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	5	3200	2.835	34.9605	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	6	3100	2.887	34.9621	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	7	3000	2.925	34.9584	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	8	2749	3.022	34.9541	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	9	2501	3.135	34.9451	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	10	2249	3.288	34.9362	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	11	1999	3.417	34.9291	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	12	1801	3.561	34.9277	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	13	1565	3.721	34.9245	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	14	1400	3.742	34.9072	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	15	1201	3.808	34.9006	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	16	1000	3.951	34.9033	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	17	900.4	4.061	34.9087	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	18	802	4.176	34.9123	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	19	700.6	4.333	34.918	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	20	601.6	4.52	34.9168	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
54	21	500	4.747	34.9045	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-1	ns
54	22	399.8	5.044	34.8841	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-2	ns
54	23	299.4	5.299	34.8086	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-3	ns
54	24	199.8	6.245	34.8254	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-4	ns
54	25	150.6	6.768	34.8462	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-5	ns
54	26	101.3	7.445	34.8894	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	54-6	ns
54	27	50.6	9.049	34.8963	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
54	28	4.4	11.38	34.7421	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	54-1B
55	3	3276	2.734	34.9462	✓	✓	✓	✓	✓	✓	✓	1	137	ns	ns	ns	ns
55	4	3150	2.758	34.9472	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	5	3151	2.758	34.947	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
55	6	3000	2.817	34.952	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	7	2750	2.926	34.9537	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	8	2499	3.077	34.9506	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	9	2249	3.18	34.9399	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	10	2000	3.328	34.9332	✓	✓	✓	✓	✓	✓	✓	2	138	ns	ns	ns	ns
55	11	1800	3.469	34.9306	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	12	1600	3.606	34.927	✓	✓	✓	✓	✓	✓	✓	3	139	ns	ns	ns	ns
55	13	1400	3.732	34.9216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	14	1194	3.831	34.9143	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
55	15	999.4	3.919	34.9074	✓	✓	✓	✓	✓	✓	✓	5	140	ns	ns	ns	ns
55	16	800.2	4.139	34.9202	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
55	17	700.3	4.251	34.9213	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	18	600.3	4.38	34.9216	✓	✓	✓	✓	✓	✓	✓	7	141	ns	ns	ns	ns
55	19	500.1	4.587	34.9219	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
55	20	400.7	4.896	34.9189	✓	✓	✓	✓	✓	✓	✓	9	142	ns	ns	ns	ns
55	21	301.9	5.026	34.8617	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	22	198.3	5.389	34.7816	✓	✓	✓	✓	✓	✓	✓	10	143	ns	ns	ns	ns
55	23	150.5	5.461	34.7512	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
55	24	120.4	5.558	34.731	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
55	25	56.1	7.664	34.7609	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	ns	ns
55	26	4.9	11.1	34.6828	✓	✓	✓	✓	✓	✓	✓	13	144	ns	ns	ns	ns
56	3	2916	2.784	34.9725	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	208	ns	ns
56	4	2848	2.827	34.9729	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	209	ns	ns
56	5	2794	2.858	34.972	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	210	ns	ns
56	6	2749	2.882	34.9714	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	7	2499	3.033	34.9596	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	8	2251	3.187	34.9442	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	9	2000	3.327	34.9298	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	10	1800	3.459	34.9256	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	11	1601	3.606	34.9246	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	12	1400	3.761	34.9216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	13	1199	3.899	34.9192	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	14	998.4	4.052	34.9193	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	15	900.3	4.179	34.9292	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	16	800.1	4.333	34.9404	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	19	701.8	4.589	34.9605	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	20	598.7	4.877	34.9835	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	21	501.9	5.427	35.0369	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-1	ns
56	22	401.2	5.711	35.0308	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-2	ns
56	23	300.6	5.265	34.8623	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-3	ns
56	24	200.8	5.601	34.7863	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-4	ns
56	25	150.4	6.049	34.7988	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-5	ns
56	26	100.3	6.648	34.8197	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	56-6	ns
56	27	51.2	9.192	34.7787	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
56	28	5.2	10.96	34.7929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	56-1B
57	3	2769	2.776	34.9775	✓	✓	✓	✓	✓	✓	✓	1	128	57-1	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
57	4	2702	2.794	34.9715	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-2	211	ns	ns
57	5	2600	2.838	34.9678	✓	✓	✓	✓	✓	✓	✓	ns	129	57-3	212	ns	ns
57	6	2600	2.838	34.9681	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
57	7	2501	2.916	34.9671	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-4	213	ns	ns
57	8	2250	3.184	34.9589	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
57	9	2001	3.377	34.9405	✓	✓	✓	✓	✓	✓	✓	2	130	57-5	214	ns	ns
57	10	1803	3.526	34.9304	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-6	ns	ns	ns
57	11	1599	3.666	34.924	✓	✓	✓	✓	✓	✓	✓	3	131	ns	215	ns	ns
57	12	1403	3.815	34.92	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-7	216	ns	ns
57	13	1202	3.973	34.9205	✓	✓	✓	✓	✓	✓	✓	4	ns	57-8	ns	ns	ns
57	14	1000	4.148	34.9249	✓	✓	✓	✓	✓	✓	✓	5	132	ns	217	ns	ns
57	15	899.2	4.233	34.9238	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-9	ns	ns	ns
57	16	800.7	4.511	34.9476	✓	ns	✓	✓	✓	✓	✓	6	ns	ns	218	ns	ns
57	17	699.7	4.901	34.9844	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-10	ns	ns	ns
57	18	598.3	5.237	34.9987	✓	✓	✓	✓	✓	✓	✓	7	133	ns	219	ns	ns
57	19	522.8	5.75	35.0418	✓	✓	✓	✓	✓	✓	✓	8	ns	57-11	ns	ns	ns
57	20	409.6	5.678	34.9066	✓	✓	✓	✓	✓	✓	✓	9	134	ns	220	ns	ns
57	21	333.1	5.997	34.9117	✓	✓	✓	✓	✓	✓	✓	ns	ns	57-12	221	ns	ns
57	22	270.2	5.606	34.7747	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
57	23	202.7	6.246	34.8088	✓	✓	✓	✓	✓	✓	✓	10	135	57-13	222	ns	ns
57	24	150.1	6.941	34.8514	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
57	25	99.1	7.413	34.8586	✓	✓	✓	✓	✓	✓	✓	11	ns	57-14	223	ns	ns
57	26	49.9	10.7	34.9013	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	224	ns	ns
57	27	5	11.54	34.9038	✓	✓	✓	✓	✓	✓	✓	13	136	57-15	225	ns	ns
58	3	2757	2.783	34.9741	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	205	ns	ns
58	4	2600	2.82	34.9689	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	206	ns	ns
58	5	2499	2.89	34.9658	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	207	ns	ns
58	6	2400	3.005	34.967	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	7	2250	3.176	34.9593	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	8	2000	3.39	34.9372	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	9	1801	3.552	34.9284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	10	1600	3.739	34.9241	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	11	1400	3.838	34.9178	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	12	1200	3.969	34.9133	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	13	1002	4.203	34.9223	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	14	900.6	4.447	34.9364	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	15	800.4	4.752	34.9637	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	16	700.3	4.871	34.9526	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	17	600.7	5.395	34.9759	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	18	500	5.873	34.9888	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-1	ns
58	19	400.6	6.079	34.9669	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-2	ns
58	20	300.8	6.246	34.9228	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-3	ns
58	21	200.3	6.482	34.8661	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-4	ns
58	22	150.7	7.04	34.8944	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-5	ns
58	23	100.9	7.07	34.8698	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	58-6	ns
58	24	49.7	7.491	34.8652	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
58	25	4.7	9.926	34.7278	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	58-1B
59	3	2784	2.776	34.978	✓	✓	✓	✓	✓	✓	✓	1	127	ns	ns	ns	ns
59	4	2751	2.791	34.9754	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	5	2601	2.823	34.9706	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	6	2499	2.877	34.9686	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	ns	ns	ns
59	7	2499	2.877	34.9687	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	8	2250	3.164	34.9609	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	9	2000	3.385	34.9406	✓	✓	✓	✓	✓	✓	✓	3	329	ns	ns	ns	ns
59	10	1801	3.544	34.9285	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	11	1600	3.7	34.9238	✓	✓	✓	✓	✓	✓	✓	4	330	ns	ns	ns	ns
59	13	1200	3.962	34.9143	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
59	14	1001	4.128	34.9187	✓	✓	✓	✓	✓	✓	✓	5	331	ns	ns	ns	ns
59	15	901.5	4.285	34.9285	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	16	800.1	4.518	34.9464	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
59	17	699.5	4.7	34.945	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	18	599.3	5.11	34.9695	✓	✓	✓	✓	✓	✓	✓	7	332	ns	ns	ns	ns
59	19	500.8	5.54	34.9658	✓	✓	✓	✓	✓	✓	✓	8	333	ns	ns	ns	ns
59	20	400.9	6.037	34.9747	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	21	317.3	5.693	34.8661	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
59	22	201.7	6.42	34.8828	✓	✓	✓	✓	✓	✓	✓	10	334	ns	ns	ns	ns
59	23	151.4	6.581	34.8216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
59	24	101.9	7.348	34.8624	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
59	25	51.2	10.71	34.865	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	ns	ns	ns
59	26	6.2	11	34.8118	✓	✓	✓	✓	✓	✓	✓	13	335	ns	ns	ns	ns
60	3	2637	2.755	34.9798	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	4	2551	2.783	34.9811	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	5	2501	2.804	34.9807	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	6	2252	3.094	34.9794	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	7	2060	3.405	34.9681	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	8	2000	3.394	34.949	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	9	1801	3.555	34.9308	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	10	1600	3.766	34.9322	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	11	1401	3.877	34.9201	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	12	1202	4.013	34.9171	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	13	1000	4.251	34.9293	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	14	900.2	4.442	34.9437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	15	799.9	4.703	34.9606	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	16	700.2	5.065	34.9765	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	17	600.1	5.48	34.9938	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	18	500.3	5.943	35.0071	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-1	ns
60	19	400	6.423	35.0336	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-2	ns
60	20	299.8	5.973	34.9063	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-3	ns
60	21	200.6	5.939	34.8167	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-4	ns
60	22	150.9	6.874	34.925	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-5	ns
60	23	100.1	7.134	34.8892	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	60-6	ns
60	24	50.5	9.152	34.7796	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
60	25	7.1	10.11	34.7581	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	60-1B
61	3	2480	2.808	34.9819	✓	✓	✓	✓	✓	✓	✓	1	322	61-1	226	ns	ns
61	4	2402	2.812	34.9821	✓	✓	✓	✓	✓	✓	✓	2	323	61-2	227	ns	ns
61	5	2401	2.813	34.982	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
61	6	2250	2.891	34.98	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-3	228	ns	ns
61	7	2001	3.221	34.9588	✓	✓	✓	✓	✓	✓	✓	3	ns	61-4	ns	ns	ns
61	8	1800	3.463	34.9397	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	229	ns	ns
61	9	1602	3.65	34.9295	✓	✓	✓	✓	✓	✓	✓	4	324	61-5	ns	ns	ns
61	10	1401	3.781	34.9227	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	230	ns	ns
61	11	1200	3.894	34.9146	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-6	ns	ns	ns
61	12	1002	4.045	34.9141	✓	✓	✓	✓	✓	✓	✓	5	325	ns	231	ns	ns
61	13	900	4.252	34.9304	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-7	ns	ns	ns
61	14	800.6	4.458	34.9459	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	232	ns	ns
61	15	700.5	4.644	34.9497	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-8	ns	ns	ns
61	16	599.8	5.111	34.9824	✓	✓	✓	✓	✓	✓	✓	7	326	ns	233	ns	ns
61	17	501.2	5.671	35.0105	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-9	ns	ns	ns
61	18	399.5	5.874	34.9914	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	234	ns	ns
61	19	298.5	6.056	34.9629	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-10	235	ns	ns
61	20	200.5	5.984	34.8953	✓	✓	✓	✓	✓	✓	✓	9	327	ns	236	ns	ns
61	21	148.5	6.084	34.8682	✓	✓	✓	✓	✓	✓	✓	ns	ns	61-11	237	ns	ns
61	22	101.1	6.45	34.8692	✓	✓	✓	✓	✓	✓	✓	10	ns	61-12	238	ns	ns
61	23	51	8.698	34.7972	✓	✓	✓	✓	✓	✓	✓	11	ns	61-13	239	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
61	24	5.3	9.872	34.7453	✓	✓	✓	✓	✓	✓	✓	12	328	61-14	240	ns	ns
62	3	2160	2.87	34.9843	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	4	2101	2.929	34.9841	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	5	2002	3.097	34.9808	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	6	1902	3.209	34.9673	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	7	1802	3.31	34.9512	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	8	1602	3.511	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	9	1400	3.719	34.9296	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	10	1199	3.856	34.9202	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	11	1000	4.076	34.9243	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	12	899	4.19	34.9272	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	13	800.7	4.423	34.9437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	14	697.1	4.719	34.9618	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	15	598.9	5.033	34.9787	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	16	501.4	5.627	35.0069	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-1	ns
62	17	400.5	6.293	35.0596	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-2	ns
62	18	298.5	6.512	35.0582	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-3	ns
62	19	201.5	6.512	35.0115	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-4	ns
62	20	150.2	6.267	34.9248	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-5	ns
62	21	99.2	6.023	34.8167	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	62-6	ns
62	22	53.4	6.712	34.8438	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
62	23	5.1	9.885	34.7595	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	62-1B
63	3	2258	2.947	34.9836	✓	✓	✓	✓	✓	✓	✓	1	315	ns	ns	ns	ns
63	4	2180	2.955	34.9832	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	5	2150	2.958	34.9831	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	6	2000	3.026	34.9801	✓	✓	✓	✓	✓	✓	✓	2	316	ns	ns	ns	ns
63	7	2000	3.026	34.9801	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
63	8	1800	3.296	34.9602	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	9	1601	3.563	34.9523	✓	✓	✓	✓	✓	✓	✓	3	317	ns	ns	ns	ns
63	10	1400	3.768	34.9363	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	11	1201	3.906	34.9229	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	12	1001	4.129	34.9288	✓	✓	✓	✓	✓	✓	✓	4	318	ns	ns	ns	ns
63	13	900.7	4.288	34.9387	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	14	801.4	4.481	34.9521	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	15	699.8	4.776	34.9691	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	16	601.1	5.107	34.9827	✓	✓	✓	✓	✓	✓	✓	5	319	ns	ns	ns	ns
63	17	500.3	5.523	34.9998	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
63	18	399.9	5.97	35.0275	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	ns	ns
63	19	301.6	6.178	35.0129	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	20	199	6.12	34.9479	✓	✓	✓	✓	✓	✓	✓	8	320	ns	ns	ns	ns
63	21	150	6.281	34.9344	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
63	22	100.4	6.593	34.9239	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
63	23	49.3	8.972	34.8308	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
63	24	5.3	9.848	34.7938	✓	✓	✓	✓	✓	✓	✓	11	321	ns	ns	ns	ns
64	3	2197	3.294	34.9878	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	4	2100	3.335	34.9878	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	5	2000	3.348	34.9878	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	6	1801	3.376	34.9879	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	7	1601	3.54	34.9823	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	8	1400	3.683	34.9405	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	9	1200	3.916	34.9289	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	10	1001	4.148	34.9281	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	11	900.6	4.359	34.943	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	12	799.2	4.613	34.9602	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	13	700.4	4.96	34.98	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	14	600.6	5.46	35.0113	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	15	500.2	5.882	35.0181	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
64	16	400.1	6.051	34.9892	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	17	300.2	5.89	34.9157	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	18	199.8	5.856	34.846	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	19	149.9	6.133	34.8479	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	20	100.7	6.423	34.8251	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	21	49.7	9.277	34.7582	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
64	22	5	10.27	34.7516	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
65	3	1624	3.675	34.9827	✓	✓	✓	✓	✓	✓	✓	1	305	65-1	241	ns	ns
65	5	1500	3.733	34.9852	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	242	ns	ns
65	6	1401	3.833	34.9823	✓	✓	✓	✓	✓	✓	✓	2	ns	65-2	ns	ns	ns
65	7	1201	3.974	34.9569	✓	✓	✓	✓	✓	✓	✓	ns	ns	65-3	243	ns	ns
65	8	1000	4.325	34.9638	✓	✓	✓	✓	✓	✓	✓	3	306	65-4	244	ns	ns
65	9	800.5	4.916	35	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
65	10	700.2	5.421	35.0387	✓	✓	✓	✓	✓	✓	✓	ns	ns	65-5	245	ns	ns
65	11	600.8	5.762	35.0425	✓	✓	✓	✓	✓	✓	✓	4	307	65-6	ns	ns	ns
65	12	509.7	6.048	35.0257	✓	✓	✓	✓	✓	✓	✓	5	309	ns	246	ns	ns
65	13	399.9	6.405	35.0458	✓	✓	✓	✓	✓	✓	✓	6	311	65-7	247	ns	ns
65	14	269.1	6.549	35.0124	✓	✓	✓	✓	✓	✓	✓	ns	ns	65-8	248	ns	ns
65	15	180.8	6.087	34.8428	✓	✓	✓	✓	✓	✓	✓	7	312	65-9	249	ns	ns
65	16	129.3	6.573	34.8396	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
65	17	88.3	7.197	34.8945	✓	✓	✓	✓	✓	✓	✓	ns	ns	65-10	250	ns	ns
65	18	49.5	8.6	34.8412	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	251	ns	ns
65	19	6.5	10.24	34.7714	✓	✓	✓	✓	✓	✓	✓	10	313	65-11	252	ns	ns
66	3	1456	4.006	34.9864	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-1	ns
66	4	1202	4.029	34.9855	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-2	ns
66	5	1002	4.354	34.9867	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-3	ns
66	6	850.7	5.147	35.0309	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-4	ns
66	7	721.6	5.644	35.0386	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-5	ns
66	8	595.9	6.258	35.0726	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-6	ns
66	9	520.6	6.579	35.0886	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-7	ns
66	10	399.5	6.801	35.0921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-8	ns
66	11	300.8	6.836	35.0812	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-9	ns
66	12	199.7	6.887	35.0625	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-10	ns
66	13	150.8	6.927	35.042	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-11	ns
66	14	99.5	6.57	34.9095	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	66-12	ns
66	15	39.9	7.917	34.9081	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
66	16	5.6	9.914	34.8382	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	66-1B
67	3	1490	4.046	34.9855	✓	✓	✓	✓	✓	✓	✓	1	296	ns	ns	ns	ns
67	4	1299	4.05	34.9852	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
67	5	1100	4.219	34.9833	✓	✓	✓	✓	✓	✓	✓	2	297	ns	ns	ns	ns
67	6	902.2	5.186	35.029	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
67	7	702.5	5.862	35.0464	✓	✓	✓	✓	✓	✓	✓	4	298	ns	ns	ns	ns
67	8	602.2	6.161	35.0462	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
67	9	499.8	6.393	35.0611	✓	✓	✓	✓	✓	✓	✓	5	300	ns	ns	ns	ns
67	10	399.9	6.522	35.0646	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
67	11	301.1	6.667	35.0704	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
67	12	200.2	6.613	35.0322	✓	✓	✓	✓	✓	✓	✓	7	301	ns	ns	ns	ns
67	13	149.7	6.572	34.9684	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
67	14	99.4	6.492	34.9158	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
67	15	51	8.715	34.8661	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
67	16	5.4	9.538	34.8662	✓	ns	✓	✓	✓	✓	✓	10	303	ns	ns	ns	ns
68	3	1708	3.882	34.9745	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	4	1602	3.927	34.9761	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	5	1402	3.921	34.9763	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	6	1202	3.929	34.9718	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	7	1002	4.121	34.9519	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	8	899.8	4.358	34.9592	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
68	9	800.6	4.591	34.9677	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	10	724.6	4.938	34.994	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	11	602.7	4.797	34.9256	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	12	501.2	5.102	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	13	418.9	5.935	35.0396	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	14	303.1	6.505	35.0738	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	15	200.1	6.737	35.08	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	16	153.4	6.699	35.0554	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	17	103	6.591	34.9621	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	18	40.2	8.176	34.7868	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
68	19	4.4	9.25	34.7985	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
69	3	1894	3.406	34.9513	✓	ns	✓	✓	✓	✓	✓	1	295	ns	ns	ns	ns
69	4	1799	3.422	34.9516	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-1	253	ns	ns
69	5	1600	3.557	34.9512	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-2	ns	ns	ns
69	6	1399	3.725	34.9486	✓	✓	✓	✓	✓	✓	✓	2	2263	69-3	254	ns	ns
69	7	1201	3.842	34.9497	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-4	255	ns	ns
69	8	1026	3.765	34.924	✓	ns	✓	✓	✓	✓	✓	3	2264	69-5	256	ns	ns
69	9	856.5	4.105	34.9571	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
69	10	800.9	4.04	34.9384	✓	✓	✓	✓	✓	✓	✓	4	2266	69-6	257	ns	ns
69	11	701.1	4.133	34.9419	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-7	ns	ns	ns
69	12	600.6	4.266	34.9449	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-8	258	ns	ns
69	13	500.5	4.416	34.9505	✓	✓	✓	✓	✓	✓	✓	5	2267	69-9	259	ns	ns
69	14	399.9	4.588	34.9516	✓	✓	✓	✓	✓	✓	✓	6	ns	69-10	ns	ns	ns
69	15	300.9	4.774	34.9549	✓	✓	✓	✓	✓	✓	✓	ns	ns	69-11	260	ns	ns
69	16	200.6	5.008	34.9585	✓	✓	✓	✓	✓	✓	✓	7	2268	69-12	261	ns	ns
69	17	149.5	5.329	34.9578	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	262	ns	ns
69	18	101	5.816	34.9327	✓	✓	✓	✓	✓	✓	✓	8	ns	69-13	263	ns	ns
69	19	39.9	8.472	34.7836	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	264	ns	ns
69	20	5.1	9.036	34.7783	✓	✓	✓	✓	✓	✓	✓	10	2269	69-14	265	ns	ns
70	3	2304	3.133	34.9437	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	4	2201	3.193	34.9456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	5	2099	3.235	34.9463	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	6	2000	3.331	34.9481	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	7	1801	3.532	34.9514	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	8	1597	3.671	34.95	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	9	1399	3.771	34.9462	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	10	1203	3.621	34.9004	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	11	1001	3.619	34.89	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	12	802	3.822	34.908	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	13	600.8	4.077	34.9211	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
70	14	450.3	4.388	34.9228	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-1	ns
70	15	300	4.701	34.9252	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-2	ns
70	16	200.9	5.094	34.9414	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-3	ns
70	17	150.9	5.395	34.9626	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-4	ns
70	18	101.3	5.738	34.9764	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-5	ns
70	19	39.8	8.231	34.8025	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	70-6	ns
70	20	4.7	8.845	34.7933	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	70-1B
71	3	2312	3.026	34.9395	✓	✓	✓	✓	✓	✓	✓	1	2254	ns	ns	ns	ns
71	4	2000	3.155	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
71	5	1801	3.336	34.9505	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
71	6	1670	3.405	34.9423	✓	✓	✓	✓	✓	✓	✓	2	2255	ns	ns	ns	ns
71	7	1399	3.667	34.957	✓	✓	✓	✓	✓	✓	✓	3	2256	ns	ns	ns	ns
71	8	998.8	3.744	34.9296	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
71	9	900.6	3.63	34.9019	✓	✓	✓	✓	✓	✓	✓	5	2257	ns	ns	ns	ns
71	10	700.3	3.767	34.9074	✓	✓	✓	✓	✓	✓	✓	6	2258	ns	ns	ns	ns
71	11	601.1	3.995	34.9269	✓	✓	✓	✓	✓	✓	✓	7	2259	ns	ns	ns	ns
71	12	500.3	4.104	34.9258	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
71	13	398.5	4.252	34.9277	✓	✓	✓	✓	✓	✓	✓	8	2260	ns	ns	ns	ns
71	14	299.5	4.418	34.9261	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
71	15	201.1	4.722	34.9387	✓	✓	✓	✓	✓	✓	✓	9	2261	ns	ns	ns	ns
71	16	101.4	5.141	34.9412	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
71	17	62.1	5.913	34.923	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
71	18	5.9	8.892	34.849	✓	✓	✓	✓	✓	✓	✓	11	2262	ns	ns	ns	ns
72	3	2547	3.082	34.9388	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	4	2254	3.221	34.9411	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	5	2000	3.375	34.939	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	6	1600	3.628	34.9329	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	7	1557	3.753	34.9492	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	8	1400	3.778	34.9393	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	9	1150	3.531	34.8838	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	10	699.9	3.734	34.9041	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	11	599.8	3.815	34.9083	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	12	497	3.924	34.9139	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	13	401.2	4.08	34.9207	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	14	300.4	4.424	34.9438	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	15	200.1	4.62	34.9363	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	16	149.4	4.794	34.9343	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	17	80	5.277	34.9435	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	18	41.3	7.334	34.8509	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
72	19	5	9.017	34.819	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	72-1B
73	3	3027	2.411	34.9175	✓	✓	✓	✓	✓	✓	✓	1	2242	73-1	266	ns	ns
73	4	3027	2.414	34.9172	✓	✓	✓	✓	✓	✓	✓	ns	2243	ns	ns	ns	ns
73	5	2902	2.907	34.9345	✓	✓	✓	✓	✓	✓	✓	ns	2244	73-2	ns	ns	ns
73	6	2751	2.998	34.9375	✓	✓	✓	✓	✓	✓	✓	2	2245	73-3	267	ns	ns
73	7	2499	3.1	34.9421	✓	✓	✓	✓	✓	✓	✓	ns	ns	73-4	268	ns	ns
73	8	2197	3.288	34.9475	✓	✓	✓	✓	✓	✓	✓	3	2246	73-5	269	ns	ns
73	9	2002	3.392	34.9418	✓	✓	✓	✓	✓	✓	✓	ns	ns	73-6	270	ns	ns
73	10	1750	3.592	34.9388	✓	✓	✓	✓	✓	✓	✓	ns	ns	73-7	271	ns	ns
73	11	1621	3.758	34.9546	✓	✓	✓	✓	✓	✓	✓	4	2248	73-8	ns	ns	ns
73	12	1449	3.67	34.9171	✓	✓	✓	✓	✓	✓	✓	ns	ns	73-9	272	ns	ns
73	13	1349	3.483	34.8806	✓	✓	✓	✓	✓	✓	✓	5	2249	73-10	273	ns	ns
73	14	998.3	3.528	34.8829	✓	✓	✓	✓	✓	✓	✓	6	ns	73-11	274	ns	ns
73	15	599.6	3.671	34.8941	✓	✓	✓	✓	✓	✓	✓	7	2250	73-12	275	ns	ns
73	16	400.3	3.97	34.9155	✓	✓	✓	✓	✓	✓	✓	8	ns	73-13	276	ns	ns
73	17	200	4.455	34.9273	✓	✓	✓	✓	✓	✓	✓	9	2251	ns	277	ns	ns
73	18	100.2	4.83	34.9274	✓	✓	✓	✓	✓	✓	✓	10	ns	73-14	278	ns	ns
73	19	29.9	7.333	34.8645	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	279	ns	ns
73	20	4.7	8.975	34.8462	✓	✓	✓	✓	✓	✓	✓	12	2252	73-15	280	ns	ns
74	3	3140	1.994	34.9069	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-1
74	4	3000	2.529	34.9211	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	5	2800	2.825	34.93	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-2
74	6	2500	3.038	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	7	2250	3.228	34.9418	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	8	1998	3.357	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	9	1771	3.522	34.9379	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-3
74	10	1601	3.662	34.9399	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	11	1400	3.638	34.9152	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-4
74	12	1202	3.488	34.8804	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	13	1043	3.557	34.8887	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-5
74	14	800.1	3.62	34.8941	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	15	601	3.659	34.8949	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-6
74	16	500.7	3.733	34.8999	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
74	17	401.3	3.808	34.9015	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-7
74	18	302.7	3.966	34.9057	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin ity	O2 Winkl	SiO2	NO3	PO4	Talk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> IPMA	<sup>13</sup> C LOCEAN
74	19	201	4.34	34.9284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-8
74	20	149.5	4.555	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-9
74	21	100.8	4.762	34.9348	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-10
74	22	39.7	7.251	34.8688	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	74-11
74	23	5.3	8.701	34.8598	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	74-1B	74-12
75	3	3135	1.541	34.9016	✓	✓	✓	✓	✓	✓	✓	1	2233	ns	281	ns	ns
75	4	3001	2.409	34.9148	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	282	ns	ns
75	5	3001	2.41	34.9148	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	6	2750	2.853	34.9306	✓	✓	✓	✓	✓	✓	✓	2	2234	ns	283	ns	ns
75	7	2501	3.067	34.9346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	8	2249	3.244	34.9338	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	9	2000	3.419	34.9331	✓	✓	✓	✓	✓	✓	✓	3	2235	ns	ns	ns	ns
75	10	1698	3.71	34.9422	✓	✓	✓	✓	✓	✓	✓	4	2236	ns	ns	ns	ns
75	11	1600	3.656	34.9187	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	12	1468	3.478	34.8797	✓	✓	✓	✓	✓	✓	✓	5	2237	ns	ns	ns	ns
75	13	1200	3.488	34.8784	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	14	799.4	3.564	34.888	✓	✓	✓	✓	✓	✓	✓	6	2239	ns	ns	ns	ns
75	15	600.4	3.604	34.8904	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	16	500.8	3.677	34.8957	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	17	402	3.762	34.9011	✓	✓	✓	✓	✓	✓	✓	7	2240	ns	ns	ns	ns
75	18	300.2	3.928	34.9108	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	19	200.4	4.206	34.9255	✓	✓	✓	✓	✓	✓	✓	8	2241	ns	ns	ns	ns
75	20	149.3	4.349	34.9268	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
75	21	100.3	4.566	34.9279	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
75	22	39	7.539	34.8475	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
75	23	4.3	8.555	34.8428	✓	✓	✓	✓	✓	✓	✓	11	2253	ns	ns	ns	ns
76	3	3157	1.509	34.902	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	4	3000	2.449	34.915	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	5	2800	2.779	34.9294	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	6	2500	3.032	34.9341	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	7	2001	3.417	34.934	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	8	1650	3.667	34.9298	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	9	1399	3.463	34.8765	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	10	1200	3.467	34.8762	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	11	999	3.505	34.8811	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	12	800.2	3.538	34.8844	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	13	603	3.624	34.8937	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	14	500.2	3.632	34.8909	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	15	400.1	3.721	34.8976	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	16	200.4	4.155	34.9154	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	17	101	5.083	34.9697	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	18	31	7.381	34.8624	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
76	19	5.6	8.507	34.8705	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
77	3	3152	1.486	34.9015	✓	✓	✓	✓	✓	✓	✓	1	286	77-1	284	ns	ns
77	4	3152	1.485	34.9015	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
77	5	3101	2.077	34.9054	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
77	6	3000	2.537	34.918	✓	✓	✓	✓	✓	✓	✓	2	287	77-2	285	ns	ns
77	7	2801	2.867	34.9336	✓	✓	✓	✓	✓	✓	✓	3	288	77-3	ns	ns	ns
77	8	2500	3.09	34.9322	✓	✓	✓	✓	✓	✓	✓	ns	ns	77-4	286	ns	ns
77	9	2200	3.337	34.9317	✓	✓	✓	✓	✓	✓	✓	4	289	77-5	ns	ns	ns
77	10	1899	3.627	34.932	✓	✓	✓	✓	✓	✓	✓	5	290	ns	287	ns	ns
77	11	1801	3.652	34.9169	ns	✓	✓	✓	✓	✓	✓	ns	ns	77-6	ns	ns	ns
77	12	1649	3.485	34.8762	✓	✓	✓	✓	✓	✓	✓	6	291	ns	ns	ns	ns
77	13	1601	3.478	34.8748	✓	✓	✓	✓	✓	✓	✓	ns	ns	77-7	288	ns	ns
77	14	1499	3.486	34.8758	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	15	1400	3.496	34.8775	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	16	1299	3.507	34.8792	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
77	17	1200	3.517	34.8804	✓	✓	✓	✓	✓	✓	✓	7	292	77-8	289	ns	ns
77	18	1100	3.527	34.8816	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	19	998.5	3.542	34.8841	✓	✓	✓	✓	✓	✓	✓	ns	ns	77-9	ns	ns	ns
77	21	900.5	3.552	34.8855	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	22	800.1	3.562	34.8867	✓	✓	✓	✓	✓	✓	✓	8	293	77-10	290	ns	ns
77	23	699.4	3.574	34.8872	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	24	599.6	3.601	34.8888	✓	✓	✓	✓	✓	✓	✓	ns	ns	77-11	291	ns	ns
77	25	500.1	3.643	34.8921	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
77	26	349.8	3.727	34.898	✓	✓	✓	✓	✓	✓	✓	9	294	77-12	292	ns	ns
77	27	250.7	3.794	34.8967	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	293	ns	ns
77	28	99.7	3.925	34.8978	✓	✓	✓	✓	✓	✓	✓	10	2232	77-13	294	ns	ns
77	29	46.7	4.231	34.9155	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	295	ns	ns
77	30	5.5	9.151	34.8506	✓	✓	✓	✓	✓	✓	✓	12	2230	77-14	296	ns	ns
78	3	3080	1.325	34.9019	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	4	3001	1.898	34.9041	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	5	2800	2.656	34.9186	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	6	2600	2.919	34.9265	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	7	2299	3.167	34.9317	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	8	2001	3.37	34.9273	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	9	1700	3.609	34.9284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	10	1581	3.619	34.9152	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	11	1471	3.397	34.8698	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	12	1401	3.39	34.8681	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	13	1300	3.404	34.8692	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	14	1199	3.405	34.8694	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	15	1101	3.415	34.8712	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	16	999.5	3.429	34.8732	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	17	899.4	3.443	34.8752	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	18	800.5	3.457	34.8771	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	19	700.9	3.477	34.8792	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	20	600	3.521	34.8845	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	21	500.6	3.535	34.8853	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	22	399.9	3.596	34.8908	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	23	350	3.607	34.8901	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
78	24	300.9	3.645	34.8921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	25	198.9	3.725	34.8937	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	26	149.6	3.876	34.8999	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	27	79.6	4.128	34.8989	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	28	39.5	7.249	34.8374	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
78	29	5	7.935	34.8345	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	78-1B
79	3	2964	1.348	34.9014	✓	✓	✓	✓	✓	✓	✓	1	274	ns	ns	ns	ns
79	4	2801	2.529	34.9191	✓	✓	✓	✓	✓	✓	✓	ns	275	ns	ns	ns	ns
79	5	2801	2.531	34.9191	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
79	6	2621	2.7	34.9284	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	7	2439	2.953	34.9361	✓	✓	✓	✓	✓	✓	✓	2	276	ns	ns	ns	ns
79	8	2001	3.183	34.9315	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	9	1551	3.599	34.93	✓	✓	✓	✓	✓	✓	✓	3	277	ns	ns	ns	ns
79	10	1378	3.496	34.8918	✓	✓	✓	✓	✓	✓	✓	4	278	ns	ns	ns	ns
79	11	1202	3.376	34.8672	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	12	999.8	3.404	34.8711	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	13	800.9	3.42	34.8729	✓	✓	✓	✓	✓	✓	✓	5	280	ns	ns	ns	ns
79	14	599	3.465	34.8783	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
79	15	501.9	3.496	34.8813	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	16	400.2	3.535	34.8843	ns	✓	✓	✓	✓	✓	✓	7	281	ns	ns	ns	ns
79	17	351.5	3.555	34.8853	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
79	18	201.7	3.703	34.8932	✓	✓	✓	✓	✓	✓	✓	8	282	ns	ns	ns	ns
79	19	149.7	3.827	34.9002	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
79	20	100.4	4.027	34.9043	✓	✓	✓	✓	✓	✓	✓	9	283	ns	ns	ns	ns
79	21	50	4.578	34.897	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
79	22	5.1	7.678	34.8342	✓	✓	✓	✓	✓	✓	✓	11	284	ns	ns	ns	ns
80	3	2896	1.392	34.9009	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
80	4	2501	2.797	34.9264	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
80	5	2001	3.24	34.9282	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
80	6	1400	3.325	34.8593	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
80	7	800.1	3.477	34.881	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
80	8	4	7.94	34.8232	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
81	3	2828	1.389	34.9021	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	4	2750	1.768	34.9033	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	5	2700	2.086	34.9046	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	6	2499	2.747	34.9202	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	7	2250	3.076	34.9327	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	8	2000	3.3	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	9	1799	3.46	34.9323	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	10	1600	3.611	34.9319	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	11	1446	3.667	34.9223	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	12	1268	3.487	34.8801	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	13	1001	3.509	34.8827	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	14	900	3.534	34.886	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	15	799.6	3.551	34.8879	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	16	699.8	3.573	34.8906	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	17	600	3.595	34.8935	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	18	500.5	3.617	34.8956	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	19	399.5	3.654	34.8977	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	20	300.2	3.712	34.9012	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	21	200.2	3.848	34.9097	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	22	149.9	3.956	34.9181	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	23	100.3	4.136	34.9182	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	24	51.3	4.441	34.9114	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
81	25	4.2	8.134	34.8238	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
82	3	2765	1.452	34.9005	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
82	4	2502	2.509	34.9138	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
82	5	2001	3.242	34.9277	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
82	6	1401	3.42	34.8762	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
82	7	599.4	3.502	34.883	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
82	8	4.4	8.685	34.8438	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
83	3	2688	1.527	34.9003	✓	✓	✓	✓	✓	✓	✓	1	265	83-1	297	ns	ns
83	4	2596	1.849	34.9038	✓	✓	✓	✓	✓	✓	✓	2	266	83-2	ns	ns	ns
83	5	2467	2.387	34.9125	✓	✓	✓	✓	✓	✓	✓	ns	ns	83-3	298	ns	ns
83	6	2224	2.974	34.9243	✓	✓	✓	✓	✓	✓	✓	3	267	83-4	ns	ns	ns
83	7	1974	3.287	34.9305	✓	✓	✓	✓	✓	✓	✓	ns	ns	83-5	299	ns	ns
83	8	1800	3.451	34.9297	✓	✓	✓	✓	✓	✓	✓	ns	ns	83-6	ns	ns	ns
83	9	1601	3.615	34.9279	✓	✓	✓	✓	✓	✓	✓	4	268	83-7	300	ns	ns
83	10	1370	3.384	34.8685	✓	✓	✓	✓	✓	✓	✓	5	269	83-8	ns	ns	ns
83	11	1201	3.409	34.8707	✓	✓	✓	✓	✓	✓	✓	ns	ns	83-9	301	ns	ns
83	12	1201	3.408	34.8707	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
83	13	1001	3.438	34.8745	✓	✓	✓	✓	✓	✓	✓	6	270	83-10	302	ns	ns
83	14	800.5	3.503	34.8833	✓	✓	✓	✓	✓	✓	✓	ns	ns	83-11	303	ns	ns
83	15	601.6	3.558	34.8893	✓	✓	✓	✓	✓	✓	✓	7	271	83-12	ns	ns	ns
83	16	401.3	3.651	34.897	✓	✓	✓	✓	✓	✓	✓	8	272	ns	304	ns	ns
83	17	288.2	3.739	34.902	✓	✓	✓	✓	✓	✓	✓	9	ns	83-13	305	ns	ns
83	18	200.4	4.027	34.9307	✓	✓	✓	✓	✓	✓	✓	10	273	ns	306	ns	ns
83	19	99.2	4.233	34.9424	✓	✓	✓	✓	✓	✓	✓	11	285	83-14	307	ns	ns
83	20	50.4	4.622	34.925	✓	✓	✓	✓	✓	✓	✓	12	ns	ns	308	ns	ns
83	21	6.3	8.312	34.8285	✓	✓	✓	✓	✓	✓	✓	13	2238	83-15	309	ns	83-1B

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
84	3	2659	1.735	34.9003	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	4	2600	1.738	34.9003	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	5	2529	1.746	34.9008	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	6	2300	2.614	34.9168	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	7	2001	3.125	34.9287	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	8	1799	3.345	34.9279	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	9	1600	3.544	34.929	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	10	1451	3.615	34.9203	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	11	1300	3.346	34.8638	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	12	1100	3.369	34.8661	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	13	1000	3.388	34.8688	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	14	800.8	3.433	34.875	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	15	596	3.507	34.8845	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	16	500.4	3.539	34.888	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	17	400.3	3.572	34.8905	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	18	300.8	3.641	34.8963	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	19	199.1	3.861	34.9149	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	20	149.8	4.007	34.9253	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	21	71.6	4.538	34.9518	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
84	22	29.3	6.806	34.844	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	3	2294	1.927	34.9031	✓	✓	✓	✓	✓	✓	✓	1	253	ns	ns	ns	ns
85	4	2202	1.948	34.9037	✓	✓	✓	✓	✓	✓	✓	2	254	ns	ns	ns	ns
85	5	2099	2.488	34.914	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	6	2000	2.785	34.9217	✓	✓	✓	✓	✓	✓	✓	3	255	ns	ns	ns	ns
85	7	2000	2.786	34.9217	✓	✓	✓	✓	✓	✓	✓	ns	256	ns	ns	ns	ns
85	8	1800	3.154	34.9296	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	9	1600	3.409	34.9301	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	10	1350	3.61	34.9212	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
85	11	1240	3.331	34.8622	✓	✓	✓	✓	✓	✓	✓	5	258	ns	ns	ns	ns
85	12	1001	3.424	34.8732	✓	✓	✓	✓	✓	✓	✓	6	259	ns	ns	ns	ns
85	13	799.2	3.485	34.8803	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	14	600.7	3.577	34.8909	✓	✓	✓	✓	✓	✓	✓	7	260	ns	ns	ns	ns
85	15	499.8	3.599	34.8919	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	16	399.8	3.696	34.9001	✓	✓	✓	✓	✓	✓	✓	8	261	ns	ns	ns	ns
85	17	299.5	3.851	34.9133	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	18	200	4.151	34.9399	✓	✓	✓	✓	✓	✓	✓	9	262	ns	ns	ns	ns
85	19	151.3	4.273	34.9489	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
85	20	100	4.503	34.9623	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
85	21	52.9	5.012	34.986	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	ns	ns	ns
85	22	5.3	8.287	34.8651	✓	✓	✓	✓	✓	✓	✓	12	263	ns	ns	ns	ns
86	3	2059	2.237	34.9085	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	4	2001	2.234	34.9086	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	5	1950	2.271	34.9102	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	6	1799	2.768	34.9221	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	7	1601	3.128	34.9306	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	8	1400	3.441	34.9326	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	9	1200	3.681	34.9358	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	10	998.4	3.764	34.9234	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	11	900.3	3.772	34.9188	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	12	800.1	3.794	34.9157	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	13	700.7	3.864	34.9188	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	14	591.6	4.033	34.9312	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	15	499.6	4.186	34.9418	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	16	400.6	4.374	34.9535	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	17	299.4	4.763	34.9793	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	18	200.3	5.147	35.0033	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	19	149.8	5.479	35.0293	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
86	20	99	6.008	35.0523	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	21	51.8	6.653	34.9982	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
86	22	4.5	9.021	34.9052	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	3	1860	2.6	34.9161	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	4	1800	2.642	34.9168	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	5	1750	2.695	34.9182	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	6	1700	2.792	34.9229	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	7	1600	3.053	34.9292	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	8	1400	3.288	34.9303	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	9	1201	3.606	34.9358	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	10	999.4	3.734	34.9323	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	11	898.8	3.846	34.9273	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	12	800.2	3.926	34.924	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	13	700.7	4.078	34.933	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	14	600.3	4.22	34.9439	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	15	500	4.467	34.9608	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	16	399.3	4.713	34.9759	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	17	299.8	5.059	35.0007	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	18	199.6	5.554	35.0356	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	19	150.4	5.799	35.0492	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	20	87.1	6.155	35.0427	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	21	45.4	7.23	34.9575	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
87	22	4.5	8.966	34.8804	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
88	3	1735	3.018	34.9253	✓	✓	✓	✓	✓	✓	✓	1	1843	88-1	310	ns	ns
88	4	1700	3.084	34.9265	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
88	5	1648	3.12	34.927	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
88	6	1600	3.162	34.9278	✓	✓	✓	✓	✓	✓	✓	ns	ns	88-2	311	ns	ns
88	7	1400	3.408	34.9315	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
88	8	1199	3.633	34.935	✓	✓	✓	✓	✓	✓	✓	2	1845	88-3	312	ns	ns
88	9	1079	3.745	34.9269	✓	✓	✓	✓	✓	✓	✓	ns	ns	88-4	ns	ns	ns
88	10	899.3	3.998	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	313	ns	ns
88	11	800.9	4.165	34.942	✓	✓	✓	✓	✓	✓	✓	3	1846	88-5	ns	ns	ns
88	12	701	4.272	34.9475	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	314	ns	ns
88	13	599.9	4.496	34.962	✓	✓	✓	✓	✓	✓	✓	4	1848	88-6	ns	ns	ns
88	14	498.6	4.717	34.975	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	315	ns	ns
88	15	401.4	5.048	34.9987	✓	✓	✓	✓	✓	✓	✓	5	1849	88-7	316	ns	ns
88	16	300.6	5.422	35.0225	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	317	ns	ns
88	17	201.3	5.87	35.0572	✓	✓	✓	✓	✓	✓	✓	7	1850	88-8	318	ns	ns
88	18	148.7	6.014	35.058	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	319	ns	ns
88	19	99.6	6.348	35.0351	✓	✓	✓	✓	✓	✓	✓	8	ns	88-9	320	ns	ns
88	20	49.7	7.56	34.9402	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	321	ns	ns
88	21	4.4	8.714	34.8957	✓	✓	✓	✓	✓	✓	✓	10	1851	88-10	322	ns	88-1
89	3	1221	3.718	34.9268	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	4	1150	3.842	34.9237	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	5	1080	4.026	34.933	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	6	970.3	4.045	34.9341	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	7	877.4	4.554	34.9581	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	8	800	4.801	34.9598	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	9	699.8	4.903	34.9548	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	10	600.9	4.887	34.9481	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	11	400	5.117	34.9507	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	12	300.2	4.821	34.8602	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	13	199.8	4.819	34.8224	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	14	150	4.855	34.7855	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	15	100.6	4.781	34.7391	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	16	50.3	4.064	34.5043	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
89	17	3.7	3.949	34.0504	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
90	3	896.6	4.453	34.9545	✓	✓	✓	✓	✓	✓	✓	1	1839	ns	ns	ns	ns
90	4	799.7	4.601	34.9594	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
90	5	761	4.604	34.9593	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
90	6	597	4.806	34.958	✓	✓	✓	✓	✓	✓	✓	2	1840	ns	ns	ns	ns
90	7	500.4	5.011	34.96	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
90	8	414.1	5.061	34.9207	✓	✓	✓	✓	✓	✓	✓	3	1841	ns	ns	ns	ns
90	9	372.6	5.415	34.9721	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
90	10	300.7	4.678	34.8119	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
90	11	199.7	4.857	34.7895	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
90	12	109.6	4.658	34.7101	✓	✓	✓	✓	✓	✓	✓	6	1842	ns	ns	ns	ns
90	13	50.4	4.301	34.5536	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	ns	ns
90	14	4.4	4.191	33.932	✓	✓	✓	✓	✓	✓	✓	8	264	ns	ns	ns	90-1
91	3	544	4.999	34.9621	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	4	501	5.01	34.9617	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	5	400.5	5.044	34.947	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	6	300	5.055	34.8823	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	7	200.6	4.812	34.7596	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	8	150.4	4.707	34.7264	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	9	100.4	4.36	34.6394	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	10	50	4.509	34.5163	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
91	11	4.4	4.706	34.0719	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	91-1B
92	3	298.3	5.004	34.8317	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	323	ns	ns
92	4	298.3	5.004	34.8311	ns	ns	✓	✓	ns	ns	ns	1	1834	ns	ns	ns	ns
92	5	249.8	4.903	34.7936	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	324	ns	ns
92	6	249.8	4.903	34.7937	ns	ns	✓	✓	ns	ns	ns	2	ns	ns	ns	ns	ns
92	7	199.7	4.846	34.7726	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	325	ns	ns
92	8	199.7	4.846	34.7724	ns	ns	✓	✓	ns	ns	ns	3	1835	ns	ns	ns	ns
92	9	149.7	4.535	34.6862	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	326	ns	ns
92	10	149.9	4.534	34.6858	ns	ns	✓	✓	ns	ns	ns	4	ns	ns	ns	ns	ns
92	11	100.4	4.458	34.6439	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	327	ns	ns
92	12	100.5	4.457	34.6435	ns	ns	✓	✓	ns	ns	ns	5	1836	ns	ns	ns	ns
92	13	39.4	5.544	34.6285	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	328	ns	ns
92	14	39.5	5.516	34.6255	ns	ns	✓	✓	ns	ns	ns	6	ns	ns	ns	ns	ns
92	15	4.3	5.563	34.3002	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	329	ns	ns
92	16	4.3	5.578	34.3006	ns	ns	✓	✓	ns	ns	ns	7	1838	ns	ns	ns	ns
93	3	221.2	5.711	34.9769	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-1
93	4	199.3	5.054	34.8213	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-2
93	5	151.2	4.837	34.7574	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-3
93	6	110.7	4.658	34.6981	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-4
93	7	40.5	4.359	34.4028	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-5
93	8	5.3	4.993	34.2622	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	93-6
94	3	193.3	4.975	34.8323	✓	✓	✓	✓	✓	✓	✓	1	ns	ns	ns	ns	ns
94	4	150	4.997	34.8242	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	ns	ns	ns
94	5	95.6	6.186	34.9288	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
94	6	37.3	6.88	34.6681	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
94	7	4.7	4.962	34.2273	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
95	3	176.1	4.794	34.7672	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-1
95	4	145.8	4.816	34.7487	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-2
95	5	87.3	4.687	34.5296	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-3
95	6	63.5	6.002	34.6469	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-4
95	7	33.8	7.686	34.81	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-5
95	9	3.7	6.009	34.3438	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	95-6
96	3	176.1	4.765	34.7399	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-1
96	4	130.2	4.666	34.6811	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-2
96	5	110.2	3.812	34.4751	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-3
96	6	74.1	3.738	34.3313	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-4
96	7	16.6	2.944	33.5247	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-5



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
96	8	5.2	2.748	33.3875	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	96-6
97	3	176	4.809	34.7251	✓	✓	✓	✓	✓	✓	✓	1	ns	ns	330	ns	97-1
97	4	148.5	4.696	34.6844	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	331	ns	97-2
97	5	80.6	3.796	34.3396	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	332	ns	97-3
97	6	44.7	2.373	34.0073	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	333	ns	97-4
97	7	6	3.512	33.4454	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	334	ns	97-5
98	3	157.1	3.95	34.4827	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	98-1
98	4	121.1	3.607	34.3767	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	98-2
98	5	90.6	3.098	34.2346	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	98-3
98	6	35.5	2.506	33.5006	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	98-4
98	7	4.9	4.501	32.2099	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	98-5
99	3	153.7	3.651	34.3763	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	99-1
99	4	112.1	3.689	34.2139	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	99-2
99	5	41.8	0.558	32.8624	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	99-3
99	6	5.9	4.612	31.3264	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	99-4
100	3	1714	3.476	34.9846	✓	✓	✓	✓	ns	ns	ns	1	ns	ns	ns	ns	ns
100	4	1714	3.476	34.9847	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
100	5	1714	3.476	34.9847	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
100	6	1714	3.476	34.9847	✓	✓	✓	✓	ns	ns	ns	2	ns	ns	ns	ns	ns
100	7	1714	3.476	34.9846	✓	✓	✓	✓	ns	ns	ns	3	ns	ns	ns	ns	ns
100	8	1714	3.476	34.9845	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
101	3	2231	3.231	34.9776	✓	✓	✓	✓	✓	✓	✓	ns	1825	101-15	335	ns	ns
101	4	2000	3.28	34.9762	✓	ns	✓	✓	✓	✓	✓	ns	ns	101-2	336	ns	ns
101	5	1800	3.315	34.9739	✓	✓	✓	✓	✓	✓	✓	ns	ns	101-3	337	ns	ns
101	6	1599	3.415	34.9672	✓	✓	✓	✓	✓	✓	✓	ns	1826	ns	338	ns	ns
101	7	1401	3.622	34.9509	✓	✓	✓	✓	✓	✓	✓	ns	1827	101-4	339	ns	ns
101	8	1200	3.738	34.9324	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
101	9	999.2	3.866	34.9182	✓	✓	✓	✓	✓	✓	✓	ns	ns	101-5	340	ns	ns
101	10	899.7	3.936	34.9156	✓	✓	✓	✓	✓	✓	✓	4	1829	ns	ns	ns	ns
101	11	800.2	3.998	34.9137	✓	✓	✓	✓	✓	✓	✓	ns	ns	101-6	341	ns	ns
101	12	700.3	4.106	34.916	✓	✓	✓	✓	✓	✓	✓	5	1830	ns	ns	ns	ns
101	13	599.5	4.246	34.9213	✓	✓	✓	✓	✓	✓	✓	ns	ns	101-7	342	ns	ns
101	14	500.2	4.429	34.9274	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
101	15	400	4.698	34.9282	✓	✓	✓	✓	✓	✓	✓	6	1831	101-8	343	ns	ns
101	16	299.3	4.948	34.9201	✓	✓	✓	✓	✓	✓	✓	7	ns	101-9	344	ns	ns
101	17	199.3	5.162	34.9075	✓	✓	✓	✓	✓	✓	✓	8	1832	101-10	345	ns	ns
101	18	150.6	5.07	34.8566	✓	✓	✓	✓	✓	✓	✓	ns	ns	101-11	346	ns	ns
101	19	100.2	5.098	34.829	✓	✓	✓	✓	✓	✓	✓	9	ns	101-12	347	ns	ns
101	20	30.5	8.516	34.6689	✓	✓	✓	✓	✓	✓	✓	10	ns	101-13	348	ns	ns
101	21	5.3	10.05	34.6447	✓	✓	✓	✓	ns	ns	ns	11	1833	101-14	ns	ns	ns
102	3	1466	3.601	34.954	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	4	1300	3.725	34.938	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	5	1100	3.803	34.9254	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	6	899	3.919	34.9198	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	7	700.7	4.218	34.9219	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	8	600.4	4.313	34.9267	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	9	455.6	4.669	34.9276	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	10	400.1	4.786	34.9217	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	11	299	5.068	34.9247	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	12	199.8	5.136	34.8834	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	13	160.4	5.079	34.8576	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	14	99.7	5.134	34.7806	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	15	34.3	9.406	34.6685	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
102	16	4.5	9.876	34.6539	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	3	1847	3.267	34.9772	✓	✓	✓	✓	✓	✓	✓	1	ns	ns	ns	ns	ns
103	4	1800	3.293	34.9761	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	5	1601	3.465	34.9615	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
103	6	1400	3.669	34.9456	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	7	1200	3.817	34.9314	✓	✓	✓	✓	✓	✓	✓	2	ns	ns	ns	ns	ns
103	8	999.5	3.959	34.9167	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	9	900	4.038	34.9137	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	10	800.1	4.129	34.916	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
103	11	699.7	4.375	34.9351	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	12	600	4.644	34.9447	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns
103	13	499.4	4.915	34.9453	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	14	431.2	5.158	34.9526	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
103	15	338.2	5.404	34.949	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
103	16	281.3	5.626	34.9758	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	ns	ns
103	17	150.9	5.636	34.928	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
103	18	84.3	5.476	34.8367	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
103	19	50.2	6.368	34.7641	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
103	20	4.3	9.77	34.6853	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
104	3	1722	3.632	34.9609	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	4	1601	3.642	34.9578	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	5	1401	3.735	34.949	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	6	1091	3.882	34.9252	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	7	1000	3.969	34.921	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	8	890.2	4.093	34.9194	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	9	601.3	4.657	34.9447	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	10	500.6	4.949	34.9535	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	11	402	5.275	34.9633	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	12	299.7	5.689	34.9851	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	13	228.4	5.894	34.9952	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	14	101.1	5.317	34.8042	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	15	51.1	7.366	34.7361	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
104	16	6.5	9.609	34.6791	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
105	3	1285	3.905	34.9365	✓	✓	✓	✓	✓	✓	✓	1	1817	ns	ns	ns	ns
105	4	1073	4.144	34.9306	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
105	5	900	4.276	34.9364	✓	✓	✓	✓	✓	✓	✓	2	1818	ns	ns	ns	ns
105	6	800.1	4.468	34.9455	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
105	7	699.9	4.641	34.9528	✓	✓	✓	✓	✓	✓	✓	3	1819	ns	ns	ns	ns
105	8	574.6	5.136	34.9979	✓	✓	✓	✓	✓	✓	✓	4	1820	ns	ns	ns	ns
105	9	504.5	5.419	35.0029	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
105	10	432	5.772	35.0263	✓	✓	✓	✓	✓	✓	✓	5	1821	ns	ns	ns	ns
105	11	299.8	6.045	35.0081	✓	✓	✓	✓	✓	✓	✓	6	1822	ns	ns	ns	ns
105	12	200.5	6.095	34.9821	✓	✓	✓	✓	✓	✓	✓	7	1823	ns	ns	ns	ns
105	13	159.4	6.044	34.9535	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
105	14	111.6	5.79	34.8868	✓	✓	✓	✓	✓	✓	✓	9	ns	ns	ns	ns	ns
105	15	50.9	7.436	34.8059	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	ns	ns	ns
105	16	4	9.958	34.7344	✓	✓	✓	✓	✓	✓	✓	11	1824	ns	ns	ns	ns
106	3	1848	3.326	34.9819	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
107	3	2423	3.205	34.9808	✓	✓	✓	✓	✓	✓	✓	1	1636	ns	350	ns	ns
107	4	2250	3.224	34.9813	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	351	ns	ns
107	5	2000	3.376	34.9821	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	352	ns	ns
107	6	1800	3.514	34.9797	✓	✓	✓	✓	✓	✓	✓	2	1810	ns	353	ns	ns
107	7	1599	3.667	34.9686	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	354	ns	ns
107	8	1400	3.72	34.9411	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
107	9	1200	3.838	34.9203	✓	✓	✓	✓	✓	✓	✓	3	1811	ns	355	ns	ns
107	10	1000	3.949	34.9084	✓	✓	✓	✓	✓	✓	✓	4	1812	ns	ns	ns	ns
107	11	900.5	4.269	34.9388	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	356	ns	ns
107	12	798.4	4.526	34.9495	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
107	13	700	4.827	34.9709	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	357	ns	ns
107	14	652.4	5.087	34.9908	✓	✓	✓	✓	✓	✓	✓	6	1813	ns	ns	ns	ns
107	15	499.5	5.71	35.0103	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	358	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/	CFC	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub>	<sup>13</sup> C	<sup>18</sup> O <sub>2</sub>	<sup>13</sup> C
					ity	Winkl						CH4	code			IPMA		LOCEAN	
107	16	400.6	5.951	35.0071	✓	✓	✓	✓	✓	✓	✓	8	1814	ns	ns	ns		ns	
107	17	299.3	6.527	35.065	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	359	ns		ns	
107	18	200.1	6.748	35.0774	✓	✓	✓	✓	✓	✓	✓	9	1815	ns	360	ns		ns	
107	19	165.3	6.718	35.0607	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	361	ns		ns	
107	20	100.9	6.575	34.9912	✓	✓	✓	✓	✓	✓	✓	10	ns	ns	362	ns		ns	
107	21	49.1	7.668	34.8304	✓	✓	✓	✓	✓	✓	✓	11	ns	ns	363	ns		ns	
107	22	5.3	9.816	34.73	✓	✓	✓	✓	✓	✓	✓	12	1816	ns	364	ns		ns	
108	3	1704	3.548	34.9764	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns		ns	
109	3	1100	4.035	34.9347	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	4	998.9	4.215	34.9352	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	5	944	4.319	34.9389	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	6	800.3	4.565	34.952	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	7	699.5	4.77	34.9626	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	8	620.7	5.144	34.9802	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	9	500.9	5.613	34.9956	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	10	354.6	6.292	35.056	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	11	301.7	6.181	35.0216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	12	202.4	6.263	34.9972	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	13	150.4	6.281	34.9821	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	14	84.6	6.06	34.8564	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	15	36.6	8.629	34.7847	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
109	16	5.4	9.639	34.736	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
110	3	1912	3.452	34.9819	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns		ns	
111	3	1940	3.569	34.9799	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	4	1801	3.633	34.9783	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	5	1601	3.708	34.9733	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	6	1400	3.766	34.9647	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	7	1200	3.92	34.9457	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	8	1075	4.085	34.9362	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	9	879.2	4.482	34.9481	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	10	766.6	4.778	34.9597	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	11	660	4.918	34.9378	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	12	600.3	5.157	34.9526	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	13	500.8	5.782	35.001	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	14	400	6.205	35.0307	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	15	301	6.193	35.0106	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	16	200.5	6.054	34.9462	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	17	150.9	5.922	34.8982	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	18	100.5	5.824	34.8568	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	19	50.5	6.807	34.8286	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
111	20	4.6	9.646	34.7212	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
112	3	1655	3.71	34.9726	ns	ns	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns		ns	
113	3	1071	4.149	34.9367	✓	✓	✓	✓	✓	✓	✓	1	ns	113-1	ns	ns		ns	
113	4	799.5	4.5	34.9377	✓	✓	✓	✓	✓	✓	✓	2	ns	113-2	ns	ns		ns	
113	5	611.6	4.653	34.9263	✓	✓	✓	✓	✓	✓	✓	3	ns	113-3	ns	ns		ns	
113	6	514.6	5.578	35.0016	✓	✓	✓	✓	✓	✓	✓	4	ns	113-4	ns	ns		ns	
113	7	446.3	5.76	35.0034	✓	✓	✓	✓	✓	✓	✓	5	ns	113-5	ns	ns		ns	
113	8	401.3	5.842	35.0039	✓	✓	✓	✓	✓	✓	✓	ns	ns	113-6	ns	ns		ns	
113	9	310.2	5.902	34.9902	✓	✓	✓	✓	✓	✓	✓	ns	ns	113-7	ns	ns		ns	
113	10	201.2	5.91	34.9507	✓	✓	✓	✓	✓	✓	✓	6	ns	113-8	ns	ns		ns	
113	11	150.9	5.793	34.8905	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
113	12	100.2	6.022	34.84	✓	✓	✓	✓	✓	✓	✓	7	ns	113-9	ns	ns		ns	
113	13	51.3	7.779	34.8095	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns		ns	
113	14	5	9.659	34.7456	✓	✓	✓	✓	✓	✓	✓	9	ns	113-10	ns	ns		ns	
114	3	1742	3.843	34.9767	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
114	4	1601	3.837	34.9764	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	
114	5	1401	3.871	34.9705	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns		ns	



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
119	6	1198	3.819	34.9685	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	7	1002	3.892	34.9559	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	8	777.8	4.022	34.9336	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	9	620.7	4.452	34.9645	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	10	501.7	4.436	34.9394	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	11	400.7	4.648	34.9492	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	12	300.1	4.706	34.9306	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	13	200.2	4.819	34.9167	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	14	120.5	5.234	34.9145	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	15	41.2	8.465	34.7683	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
119	16	6	9.615	34.7402	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns	ns	ns	ns
120	3	1464	4.063	34.9883	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	4	1400	4.059	34.9884	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	5	1201	4.051	34.9877	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	6	999.8	4.248	34.9794	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	7	799.5	5.056	35.0216	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	8	648.4	5.68	35.0441	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	9	499.4	6.287	35.0577	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	10	399.4	6.596	35.0737	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	11	300.6	7.031	35.1169	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	12	200.3	7.128	35.1054	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	13	150	7.108	35.0689	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	14	109.6	6.664	34.919	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	15	50.9	9.39	34.8375	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
120	16	5.2	10.23	34.7911	✓	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
121	3	1304	4.135	34.99	✓	✓	✓	✓	✓	✓	✓	1	ns	121-1	375	ns	ns
121	4	1198	4.14	34.989	✓	✓	✓	✓	✓	✓	✓	ns	ns	121-2	376	ns	ns
121	5	999	4.302	34.9906	✓	✓	✓	✓	✓	✓	✓	2	ns	121-3	377	ns	ns
121	6	814.6	5.153	35.0334	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	378	ns	ns
121	7	774.3	5.005	34.9725	✓	✓	✓	✓	✓	✓	✓	ns	ns	121-4	379	ns	ns
121	8	554.2	5.922	35.0178	✓	✓	✓	✓	✓	✓	✓	4	ns	121-5	380	ns	ns
121	9	500.8	5.847	34.98	✓	✓	✓	✓	✓	✓	✓	ns	ns	121-6	381	ns	ns
121	10	401.9	6.433	35.0499	✓	✓	✓	✓	✓	✓	✓	5	ns	121-7	382	ns	ns
121	11	299.5	6.652	35.0697	✓	✓	✓	✓	✓	✓	✓	ns	ns	121-8	383	ns	ns
121	12	199.3	6.655	35.0482	✓	✓	✓	✓	✓	✓	✓	6	ns	121-9	384	ns	ns
121	13	149.8	6.489	35.0007	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	385	ns	ns
121	14	100.4	6.262	34.919	✓	✓	✓	✓	✓	✓	✓	7	ns	121-10	386	ns	ns
121	15	55	7.349	34.8747	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	387	ns	ns
121	16	5.5	9.955	34.7951	✓	✓	✓	✓	✓	✓	✓	9	ns	121-11	388	ns	ns
122	3	1308	4.176	34.9898	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	4	1201	4.178	34.9892	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	5	1000	4.551	34.9975	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	6	800.5	5.334	35.0337	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	7	600.8	6.307	35.0798	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	8	552	6.437	35.068	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	9	378.4	6.543	35.0644	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	10	301.8	6.849	35.1051	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	11	200.9	6.744	35.0393	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	12	150.4	7.181	35.1048	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	13	99.7	7.126	35.0508	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	14	56.5	7.418	34.8854	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
122	15	4.4	10.2	34.876	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
123	3	1245	4.177	34.984	✓	✓	✓	✓	✓	✓	✓	1	1619	ns	ns	ns	ns
123	4	1201	4.172	34.9841	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
123	5	1001	4.69	34.9834	✓	✓	✓	✓	✓	✓	✓	2	1620	ns	ns	ns	ns
123	6	800.1	5.56	35.0129	✓	✓	✓	✓	✓	✓	✓	3	ns	ns	ns	ns	ns
123	7	600.3	6.556	35.0828	✓	✓	✓	✓	✓	✓	✓	4	ns	ns	ns	ns	ns



St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
123	8	499.7	6.537	35.0743	✓	✓	✓	✓	✓	✓	✓	5	1621	ns	ns	ns	ns
123	9	400	6.426	35.0405	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
123	10	300.1	6.485	35.0459	✓	✓	✓	✓	✓	✓	✓	6	1622	ns	ns	ns	ns
123	11	201.1	6.701	35.0662	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
123	12	142.5	7.086	35.1113	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
123	13	100.6	6.441	34.9557	✓	✓	✓	✓	✓	✓	✓	7	1613	ns	ns	ns	ns
123	14	50.6	7.5	34.8598	✓	✓	✓	✓	✓	✓	✓	8	ns	ns	ns	ns	ns
123	15	4.2	10.5	34.8021	✓	✓	✓	✓	✓	✓	✓	9	1631	ns	ns	ns	ns
124	3	989.2	4.538	34.9945	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	4	861.1	4.823	34.9946	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	5	662.2	5.178	34.9515	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	6	612.8	5.791	35.0198	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	7	500.4	6.376	35.0633	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	8	436.4	6.534	35.0757	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	9	277.5	6.71	35.0717	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	10	200.4	6.77	35.0614	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	11	152	6.538	34.9974	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	12	101	6.551	34.9648	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	13	40.2	9.474	34.8044	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
124	14	4.5	10.52	34.805	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
125	3	693.9	5.855	35.0668	✓	✓	✓	✓	✓	✓	✓	1	ns	125-1	ns	ns	ns
125	4	602.1	6.662	35.1034	✓	✓	✓	✓	✓	✓	✓	2	ns	125-2	389	ns	ns
125	5	500.3	6.882	35.1023	✓	✓	✓	✓	✓	✓	✓	3	ns	125-3	390	ns	ns
125	6	400.3	7.025	35.1111	✓	✓	✓	✓	✓	✓	✓	ns	ns	125-4	391	ns	ns
125	7	298.1	7.183	35.1199	✓	✓	✓	✓	✓	✓	✓	4	ns	125-5	392	ns	ns
125	8	199.7	7.142	35.0926	✓	✓	✓	✓	✓	✓	✓	ns	ns	125-6	393	ns	ns
125	9	152.6	7.274	35.1022	✓	ns	✓	✓	✓	✓	✓	ns	ns	125-7	394	ns	ns
125	10	88.1	7.158	35.0232	✓	✓	✓	✓	✓	✓	✓	5	ns	125-8	395	ns	ns
125	11	50.5	8.579	34.9854	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	396	ns	ns
125	12	5.9	10.49	34.9535	✓	✓	✓	✓	✓	✓	✓	7	ns	125-9	397	ns	ns
126	3	1278	4.863	35.012	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	4	1001	4.926	35.0194	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	5	900.1	5.068	35.0292	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	6	801.5	5.669	35.0619	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	7	661.8	6.331	35.0955	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	8	552.9	6.742	35.1095	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	9	500.5	6.869	35.1132	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	10	399.9	6.963	35.1061	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	11	300.5	7.19	35.1181	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	12	200.9	7.317	35.1246	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	13	149.5	7.344	35.1175	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	14	101.3	7.236	35.0722	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	15	43.2	7.76	34.991	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
126	16	6.1	10.97	34.9051	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
127	3	793.7	5.754	35.0612	✓	✓	✓	✓	✓	✓	✓	1	1610	ns	ns	ns	ns
127	4	600	6.376	35.0832	✓	✓	✓	✓	✓	✓	✓	2	1611	ns	ns	ns	ns
127	5	499.1	6.651	35.091	✓	✓	✓	✓	✓	✓	✓	3	1614	ns	ns	ns	ns
127	6	399.7	7.006	35.1223	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
127	7	300.2	7.149	35.1261	✓	✓	✓	✓	✓	✓	✓	4	1615	ns	ns	ns	ns
127	8	200.2	7.257	35.1258	✓	✓	✓	✓	✓	✓	✓	5	1616	ns	ns	ns	ns
127	9	150.6	7.289	35.1239	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
127	10	99.9	7.236	35.0998	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
127	11	49.5	7.164	34.993	✓	✓	✓	✓	✓	✓	✓	7	ns	ns	ns	ns	ns
127	12	4.9	10.61	34.8979	✓	✓	✓	✓	✓	✓	✓	8	1617	ns	ns	ns	ns
128	3	655.5	5.997	35.0793	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	4	601.1	6.381	35.0983	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	5	499.9	6.803	35.1173	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin	O2	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
					ity	Winkl											
128	6	398.8	6.994	35.1253	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	7	299.5	7.203	35.1362	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	8	198.5	7.269	35.1264	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	9	150.5	7.121	35.0854	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	10	107.1	7.301	35.0821	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	11	50.8	8.209	35.0484	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
128	12	6.2	11.01	34.9211	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
129	3	675.2	6.312	35.0925	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-1	ns	ns	ns
129	4	600.9	6.663	35.101	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-2	398	ns	ns
129	5	500	6.978	35.1134	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-3	399	ns	ns
129	6	401.2	7.129	35.1143	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-4	400	ns	ns
129	7	299.5	7.27	35.1241	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-5	401	ns	ns
129	8	200.2	7.368	35.128	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-6	402	ns	ns
129	9	150.3	7.382	35.1244	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	403	ns	ns
129	10	100.5	7.346	35.1047	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-7	404	ns	ns
129	11	64.2	7.581	35.0936	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	405	ns	ns
129	12	4.5	10.88	34.9773	✓	✓	✓	✓	✓	✓	✓	ns	ns	129-8	406	ns	ns
130	3	712.5	6.11	35.0787	✓	✓	✓	✓	✓	✓	✓	1	1600	ns	ns	ns	ns
130	4	600.6	6.516	35.0947	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
130	5	500.9	6.758	35.1034	✓	✓	✓	✓	✓	✓	✓	2	1601	ns	ns	ns	ns
130	6	399.5	6.958	35.1128	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
130	7	300.3	7.072	35.11	✓	✓	✓	✓	✓	✓	✓	3	1602	ns	ns	ns	ns
130	8	200	7.172	35.1086	✓	✓	✓	✓	✓	✓	✓	4	1603	ns	ns	ns	ns
130	9	149.9	7.289	35.1162	✓	✓	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
130	10	100.9	7.178	35.0685	✓	✓	✓	✓	✓	✓	✓	5	ns	ns	ns	ns	ns
130	11	50.2	7.653	35	✓	✓	✓	✓	✓	✓	✓	6	ns	ns	ns	ns	ns
130	12	4.6	11.02	34.9341	✓	✓	✓	✓	✓	✓	✓	7	1604	ns	ns	ns	ns
131	3	1045	5.622	35.0617	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	4	801.1	5.753	35.0705	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	5	598.8	6.179	35.0899	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	6	500.7	6.398	35.0821	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	7	400.7	6.763	35.1024	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	8	300	6.941	35.1102	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	9	200	7.081	35.1115	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	11	151.2	7.102	35.099	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	12	99.2	7.075	35.0657	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	13	50.3	7.918	34.9032	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
131	14	6	11.1	34.8809	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	3	774.3	5.785	35.0724	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	4	601.2	6.351	35.0943	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	5	501.5	6.657	35.1108	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	6	401.5	6.977	35.1289	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	7	301	7.155	35.1209	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	8	200.8	7.33	35.1303	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	9	101.2	7.379	35.1123	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	10	50.8	8.179	35.0478	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
132	11	6.2	11.53	34.9582	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns
133	3	677.8	6.414	35.0915	ns	ns	✓	✓	✓	✓	✓	1	1605	ns	407	ns	ns
133	4	599.6	6.44	35.0923	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	408	ns	ns
133	5	499.5	6.573	35.098	ns	ns	✓	✓	✓	✓	✓	2	1606	ns	409	ns	ns
133	6	399.5	6.769	35.1048	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	410	ns	ns
133	7	299	6.978	35.11	ns	ns	✓	✓	✓	✓	✓	ns	1607	ns	411	ns	ns
133	8	191.3	7.201	35.1297	ns	ns	✓	✓	✓	✓	✓	3	1608	ns	412	ns	ns
133	9	100.8	7.286	35.1156	ns	ns	✓	✓	✓	✓	✓	4	ns	ns	413	ns	ns
133	10	49.9	8.069	35.0504	ns	ns	✓	✓	✓	✓	✓	5	ns	ns	414	ns	ns
133	11	4.7	11.45	34.9659	ns	ns	✓	✓	✓	✓	✓	6	1609	ns	415	ns	ns
134	3	607.6	6.746	35.1238	ns	ns	✓	✓	✓	✓	✓	ns	ns	ns	ns	ns	ns

St.	Bottl	Pres	Tis	CTD-S	Salin ity	O2 Winkl	SiO2	NO3	PO4	TAlk	pHT25	N2O/ CH4	CFC code	C <sub>T</sub>	DOC	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C IPMA	<sup>18</sup> O <sub>2</sub> <sup>13</sup> C LOCEAN
134	4	500.2	6.811	35.1272	ns	ns	√	√	√	√	√	ns	ns	ns	ns	ns	ns
134	5	299.3	7.112	35.1302	ns	ns	√	√	√	√	√	ns	ns	ns	ns	ns	ns
134	6	196.3	7.285	35.1334	ns	ns	√	√	√	√	√	ns	ns	ns	ns	ns	ns
134	7	50.2	7.909	35.0841	ns	ns	√	√	√	√	√	ns	ns	ns	ns	ns	ns
134	8	5.6	10.92	34.9822	ns	ns	√	√	√	√	√	ns	ns	ns	ns	ns	ns
135	3	250.7	7.038	35.1375	ns	ns	√	√	√	√	√	1	ns	ns	ns	ns	ns
135	4	149.4	7.161	35.1336	ns	ns	√	√	√	√	√	2	ns	ns	ns	ns	ns
135	5	99.5	7.18	35.1325	ns	ns	√	√	√	√	√	3	ns	ns	ns	ns	ns
135	6	50.3	7.796	35.1013	ns	ns	√	√	√	√	√	4	ns	ns	ns	ns	ns
135	7	4.4	12.27	34.967	ns	ns	√	√	√	√	√	5	ns	ns	ns	ns	ns
136	3	133.5	7.66	35.1149	ns	ns	√	√	√	√	√	ns	ns	ns	416	ns	ns
136	4	100.2	8.021	35.1021	ns	ns	√	√	√	√	√	ns	ns	ns	417	ns	ns
136	5	49.8	8.3	35.0956	ns	ns	√	√	√	√	√	ns	ns	ns	418	ns	ns
136	6	4.5	9.682	35.0651	ns	ns	√	√	√	√	√	ns	ns	ns	419	ns	ns

## **14. ANNEX II: Press Report**

Regresará a Vigo el 9 de agosto

## **El Sarmiento de Gamboa parte hoy del Puerto de Vigo hacia Groenlandia**

-La expedición científica está dirigida Fiz Fernández Pérez, profesor de investigación del CSIC en el IIM y miembro del grupo de Oceanología y se enmarca en el proyecto BOCATS, que se inició en 2014 y concluirá este año.

-A bordo van 20 científicos y técnicos del IIM, UVigo, Ifremer y UTM-Sede Atlántica.

**Santiago de Compostela, 17 de junio de 2016.** El buque oceanográfico Sarmiento de Gamboa, una de las grandes instalaciones científico-técnicas del Consejo Superior de Investigaciones Científicas (CSIC), parte hoy a las 22.00 horas del Puerto de Vigo (muelle transversal), donde tiene su base de operaciones, hacia Groenlandia.

A bordo va personal del CSIC (IIM y UTM-Sede Atlántica), de la UVigo y del Ifremer a bordo para continuar con los estudios sobre la incidencia del dióxido de carbono de origen humana y la acidificación oceánica que vienen realizando desde hace dos décadas. Este año, se evaluarán por primera vez la importancia de la dinámica de los sedimentos en los flujos de carbono en el Atlántico Norte. Estos trabajos científicos constituyen parte del proyecto "Observación bienal de carbono, acidificación, transporte y sedimentación en el Atlántico Norte (BOCATS)".

### **El Sarmiento de Gamboa**

Presta un servicio muy importante a la investigación oceanográfica de España y participa en numerosas campañas. Está destinado a la investigación en aguas del Océano Atlántico, por lo que su base de operaciones está en el Puerto de Vigo.

Dispone de gran variedad de equipamiento científico y técnico para Oceanografía, Biología y Geoquímica Marina, así como equipamiento de laboratorio y auxiliar. Incorpora, además, las tecnologías más avanzadas en cuanto a los sistemas de navegación.

El CSIC es el responsable del mantenimiento del equipamiento científico del buque y aporta el personal técnico de apoyo para la realización de campañas oceanográficas.





► 18 Junio, 2016

# El “Sarmiento de Gamboa” analiza en el Atlántico norte la huella humana en el mar

El buque parte hacia Groenlandia para estudiar la incidencia del dióxido de carbono en los océanos

REDACCIÓN ■ Vigo

El buque oceanográfico *Sarmiento de Gamboa* del Consejo Superior de Investigaciones Científicas (CSIC) partió ayer por la noche de Vigo con destino a Groenlandia para estudiar la incidencia del dióxido de carbono de origen humana y también la acidificación oceánica como parte del proyecto “Observación bienal de carbono, acidifi-

ficación, transporte y sedimentación en el Atlántico Norte (BOCATS)”.

A bordo del barco va personal del CSIC (Instituto de Investigaciones Marinas y UTM-Sede Atlántica), de la Universidade de Vigo y del Ifremer para continuar con los estudios que vienen realizando desde hace dos décadas. Este año, se evaluarán por primera vez la importancia de la dinámica de los sedimen-



El “Sarmiento de Gamboa”, antes de partir. // M. Canosa

tos en los flujos de carbono en el Atlántico Norte.

El buque, una de las grandes instalaciones científico-técnicas del

CSIC, partió en torno a las 22.00 horas desde el muelle transversal del Puerto de Vigo, donde tiene su base de operaciones.



► 18 Junio, 2016

## 24 horas

### La graduación de Comercio tuvo como padrino a Patricio Sánchez

La Universidad de Vigo celebra estos días la graduación de las distintas promociones y ayer fue un día completo con seis actos de carreras que se imparten en los tres campus. En el caso de Vigo se celebraron las graduaciones de Comercio, Química y la de Relaciones Laborales e Recursos Humanos, estas dos últimas en el propio Campus. La graduación de la tercera promoción del grado en Comercio se celebró en cambio en el Centro Social Afundación y contó con la participación del alcalde, Abel Caballero. El padrino de esta promoción de alumnos fue Patricio Sánchez Bello, que fue el decano de la Escuela durante doce años y que se jubiló en fecha reciente.



LANFOCO



VICENTE ALONSO

### El "Sarmiento de Gamboa" zarpó ayer a Groenlandia con una misión

El buque oceanográfico "Sarmiento de Gamboa" zarpó ayer del Puerto de Vigo con destino a Groenlandia. A bordo viaja personal del Consejo Superior de Investigaciones Científicas, de la Universidad de Vigo y del Ifre-

mer para estudiar la incidencia del dióxido de carbono de origen humano y la acidificación oceánica que vienen realizando desde hace dos décadas. Este buque está destinado a la investigación en aguas del Atlántico.



VICENTE ALONSO

### La torre del Xeral se queda al fin vacía

La torre del viejo Hospital Xeral despidió ayer a los últimos inquilinos de la sanidad, al producirse el traslado de dos unidades de laboratorio que quedaban operativas en este centro. Se tra-

ta de la Unidad de Citogenética, que se trasladó al Cunqueiro, y el Laboratorio de Radioinmunología, que se fue al Hospital do Meixoeiro. Ahora, la torre ya se puede devolver al Estado.

### El Concello explica el viaje a Reino Unido de 420 alumnos de la ESO

El alcalde de Vigo, Abel Caballero, mantuvo ayer una reunión informativa con el alumnado de ESO beneficiario del programa "Vigo en inglés 2016" y con sus familiares. Como en ocasiones anteriores, la charla informativa con los representantes de la concejalía de Educación y de la empresa que organiza las estancias en Reino Unido se celebró en el Auditorio Mar de Vigo, donde los padres pudieron aclarar sus dudas y recibir todos los datos para el viaje de los escolares, que se producirá en el mes de septiembre. Esta semana viajaron a Inglaterra los 150 alumnos de Bachillerato que fueron incluidos de forma excepcional este año en el programa de inmersión lingüística en inglés del Concello de Vigo.



LANFOCO



[http://cadenaser.com/emisora/2016/06/17/radio\\_vigo/1466174594\\_303699.html](http://cadenaser.com/emisora/2016/06/17/radio_vigo/1466174594_303699.html)

## El Sarmiento de Gamboa parte hacia Groenlandia para estudiar el efecto invernadero en el mar

Saldrá esta noche del Puerto de Vigo y analizará los niveles de PH en la columna de agua de 120 puntos del trayecto para estudiar el nivel de absorción de CO2 por la acción humana en el océano



El buque oceanográfico Sarmiento de Gamboa atracado en el Puerto de Vigo / Felipe Troitiño (Iniciativas Audiovisuales de Vigo)

JAIME GONZÁLEZ DE HAZ VIGO [17/06/2016 - 16:43 CET](#)

El buque oceanográfico Sarmiento de Gamboa, una de las grandes instalaciones científico-técnicas del Consejo Superior de Investigaciones Científicas (CSIC), volverá a partir esta noche del Puerto de Vigo rumbo a Groenlandia. A bordo irá personal del CSIC (IIM y UTM-Sede Atlántica), de la UVigo y del Infremer a

bordo para continuar con los estudios sobre la incidencia del dióxido de carbono de origen humana y la acidificación oceánica que vienen realizando desde hace dos décadas. Un trabajo que forma parte del proyecto “Observación bienal de carbono, acidificación, transporte y sedimentación en el Atlántico Norte (BOCATS)”.

La misión se detendrá "en unas 120 estaciones en las que se lanzará un equipo llamado CTD que a medida que se vaya hundiendo hasta el fondo, irá registrando la temperatura, la salinidad y la presión, así como las corrientes" según ha explicado en Radio Vigo Cadena SER el director de la misión, Fiz Fernández. "Cuando el equipo llega al fondo marino se detiene y retorna de nuevo a la superficie. En ese camino de vuelta se van cerrando las botellas hidrográficas en las que se guardan muestras de agua que nos permitirán, una vez en el barco, medir una serie de parámetros químicos del agua como el oxígeno disuelto, la salinidad, el contenido de nutrientes... y también las variables del sistema del carbónico, del sistema del CO<sub>2</sub>", añadió.

Según indicó el profesor del CSIC, "desde que el hombre está emitiendo CO<sub>2</sub> procedente de combustibles fósiles o de las industrias térmicas, etc. el CO<sub>2</sub> en la atmósfera ha aumentado de una manera muy llamativa. En este proceso, el océano absorbe un 30% del CO<sub>2</sub> emitido, aunque esto tiene consecuencias, porque según se va acumulando en la columna de agua, va haciendo que el agua sea más ácida" influyendo en el desarrollo de parte de la fauna marina. "El océano tiene un PH algo superior al valor neutro, es decir, ligeramente básico, y esto es lo que aprovechan los organismos marinos que tienen concha o estructuras calcáreas como los bivalvos o los corales, que aprovechando esta basicidad del océano, forman estructuras de carboato de calcio", señaló.

De este modo, el aumento de la acidez de las aguas está haciendo que muchas de estas estructuras se deshagan afectando a estos organismos y sus ecosistemas, algo

<http://www.farodevigo.es/mar/2016/06/18/sarmiento-gamboa-analiza-atlantico-norte/1482454.html>

## El "Sarmiento de Gamboa" analiza en el Atlántico norte la huella humana en el mar

**El buque parte hacia Groenlandia para estudiar la incidencia del dióxido de carbono en los océanos**

Redacción | Vigo 18.06.2016 | 02:44

El "Sarmiento de Gamboa", antes de partir. // M. Canosa

El buque oceanográfico *Sarmiento de Gamboa* del Consejo Superior de Investigaciones Científicas (CSIC) partió ayer por la noche de Vigo con destino a Groenlandia para estudiar la incidencia del dióxido de carbono de origen humana y también la acidificación oceánica como parte del proyecto "Observación bienal de carbono, acidificación, transporte y sedimentación en el Atlántico Norte (BOCATS)".



A bordo del barco va personal del CSIC (Instituto de Investigaciones Marinas y UTM-Sede Atlántica), de la Universidade de Vigo y del Infremer para continuar con los estudios que vienen realizando desde hace dos décadas. Este año, se evaluarán por primera vez la importancia de la dinámica de los sedimentos en los flujos de carbono en el Atlántico Norte.

El buque, una de las grandes instalaciones científico-técnicas del CSIC, partió en torno a las 22.00 horas desde el muelle transversal del Puerto de Vigo, donde tiene su base de operaciones.



<http://www.atlantico.net/articulo/vigo/sarmiento-gamboa-zarpo-ayer-groenlandia-mision/20160618013936536407.html>

VIGO

# El “Sarmiento de Gamboa” zarpó ayer a Groenlandia con una misión

TEMAS SARMIENTO GAMBOA ZARPÓ AYER GROENLANDIA MISIÓN



El

“Sarmiento de Gamboa” zarpó ayer a Groenlandia con una misión

REDACCIÓN VIGO 18/06/2016 01:39 H.

El buque oceanográfico “Sarmiento de Gamboa” zarpó ayer del Puerto de Vigo con destino a Groenlandia. A bordo viaja personal del Consejo Superior de Investigaciones Científicas, de la Universidad de Vigo y del Ifremer para estudiar la incidencia del dióxido de carbono de origen humano y la acidificación oceánica que vienen realizando desde hace dos décadas. Este buque está destinado a la investigación en aguas del Atlántico.



[Inicio](#) > [Institucional](#)

Xoves, 16 de xuño do 2016

[Investigadores da Universidade, CSIC e Ifremer partirán mañá de Vigo a bordo do Sarmiento de Gamboa](#)

## A campaña BOCATS estudará por primeira vez no Atlántico Norte o balance do ciclo de carbono analizando tamén os sedimentos

Os estudos previos restrínxense exclusivamente á columna de auga

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### M<sup>a</sup> del Carmen Echevarría | Vigo

O progresivo incremento nos niveis de dióxido de carbono atmosféricos desde o inicio da era industrial, repercute tamén nas augas oceánicas superficiais ao absorber estas parte dese CO<sub>2</sub> antrópico. Se por unha banda, os océanos contribúen a mitigar o quecemento global ao captar parte dese dióxido de carbono atmosférico, pola outra, o mar se está a acidificar porque cada vez hai máis CO<sub>2</sub> disolto, o que ocasiona efectos negativos para organismos con cachos, esqueletos, cunchas, etc. carbonatados, especies algunhas delas de interese económico. Estes efectos descritos en numerosos traballos científicos ocorren na columna de auga, pero que sucede nos fondos nos que se acumula unha parte do carbono "secuestrado" polos organismos, como tamén o fan o resto de cachos ou esqueletos, en forma de carbonato cálcico, cando os organismos morren? "Aí é onde estriba a importancia dos sedimentos, porque neles podemos medir canto carbono orgánico e carbonato conteñen e podemos medir como foi cambiando a súa concentración ao longo do tempo, mesmo uns cantos séculos. É dicir, podemos medir a concentración que había antes da era industrial e canto foi variando ao longo desta, ata os nosos días". Así explica Guillermo Francés, docente e investigador do Departamento de Xeociencias Mariñas e Ordenación do Territorio da Universidade de Vigo, a importancia de, á hora de calcular fluxos do ciclo do carbono, non restrinxirse unicamente á columna de auga, como ocorre na maioría de estudos

realizados, senón introducir no cálculo a parte que "aínda minoritaria, non é desprezable", vai aos sedimentos ou, eventualmente, que os sedimentos están a devolver ao océano.

Aínda que, como detalla Francés, "os sedimentos permiten facer estimacións sobre a produtividade primaria e a circulación de masas de auga (os dous grandes grupos de variables que interveñen no ciclo do carbono) no pasado recente, e ademais, para os tempos actuais, permiten relacionar as concentracións no sedimento máis superficial co que está a ocorrer a diferentes profundidades da columna de auga", o estudo integral, que ademais da columna de auga considera tamén os sedimentos, é algo absolutamente novo, cando menos no Atlántico Norte. De aí a importancia da campaña BOCATS que este venres 17 de xuño comeza e que se prolongará ata principios de agosto e na que persoal investigador e técnico da Universidade de Vigo, o Instituto de Investigacións Mariñas do CSIC en Vigo e Ifremer navegará a bordo do buque oceanográfico Sarmiento de Gamboa de Vigo a Reikiavik. Durante ese período os investigadores e investigadoras, así como o persoal técnico, tomarán medidas de diversas variables oceanográficas en aproximadamente 126 puntos ao longo dun transecto do Atlántico Norte comprendido entre Vigo e Groenlandia (sección OVIDE), para a continuación navegar cara ao sur ata a dorsal de Reykjanes e continuar o transecto (sección RREX) seguindo a orientación desta cordilleira submarina ata finalizar en Islandia.

### Investigadores da Universidade centrados no estudo dos sedimentos

Xunto a Guillermo Francés, Irene Alejo, Víctor Pelayo e Susa Álvarez completan a representación da Universidade de Vigo na campaña BOCATS, que se desenvolve no marco do proxecto do mesmo nome, acrónimo de *Biennial Observation of Carbon, Acidification, Transport and Sedimentation in the North Atlantic*, Observación bienal do carbono, acidificación, transporte e sedimentación no Atlántico Norte, un proxecto financiado polo MINECO con máis de 158.000 euros (sen incluír a campaña) e que lidera o investigador do Departamento de Oceanografía do Instituto de Investigacións Mariñas do CSIC en Vigo Fiz Fernández.

"A campaña BOATS ten como obxectivo avaliar os transportes de auga, sal, calor, carbono natural e antropoxénico, outros trazadores bioxeoquímicos e determinar os fluxos de carbono entre a columna de auga e o sedimento do fondo oceánico", detalla Guillermo Francés en relación coa campaña, que no caso dos investigadores e investigadoras da Universidade de Vigo se concreta no estudo dos sedimentos do fondo oceánico co fin de establecer cambios a escala centenaria da velocidade das correntes de fondo e taxas de acumulación de carbonato cálcico e de carbono orgánico. "A vantaxe deste estudio consiste en que os datos sedimentarios serán adquiridos nos mesmos puntos en que se caracterice a auga de fondo, polo que nos permitirá establecer relacións entre o rexistro sedimentario actual e as propiedades físico-químicas da masa de auga en contacto directamente co fondo", destaca o investigador do Departamento de Xeociencias Mariñas e Ordenación do Territorio.

No caso da sección OVIDE existen medidas da columna de auga repetidas cada dous anos desde 2002, pero esta será a primeira vez que se leve a cabo a análise integral da columna de auga e sedimentos. Pola súa banda, a columna da auga da sección RREX mediuse por primeira vez o ano pasado, pero nesa ocasión non se mediron sedimentos. "Ata onde lembramos tanto Fiz Fernández coma min, non coñecemos ningún estudo deste tipo nunha zona tan extensa do océano, con tantos puntos de medida, a profundidades diversas e en diferentes masas de auga de fondo. Ben é certo que se fixo algo parecido nalgúns sectores moi restrinxidos, pero nada que ver que co que nós propoñemos", explica Guillermo Francés.







Futuro alumnado



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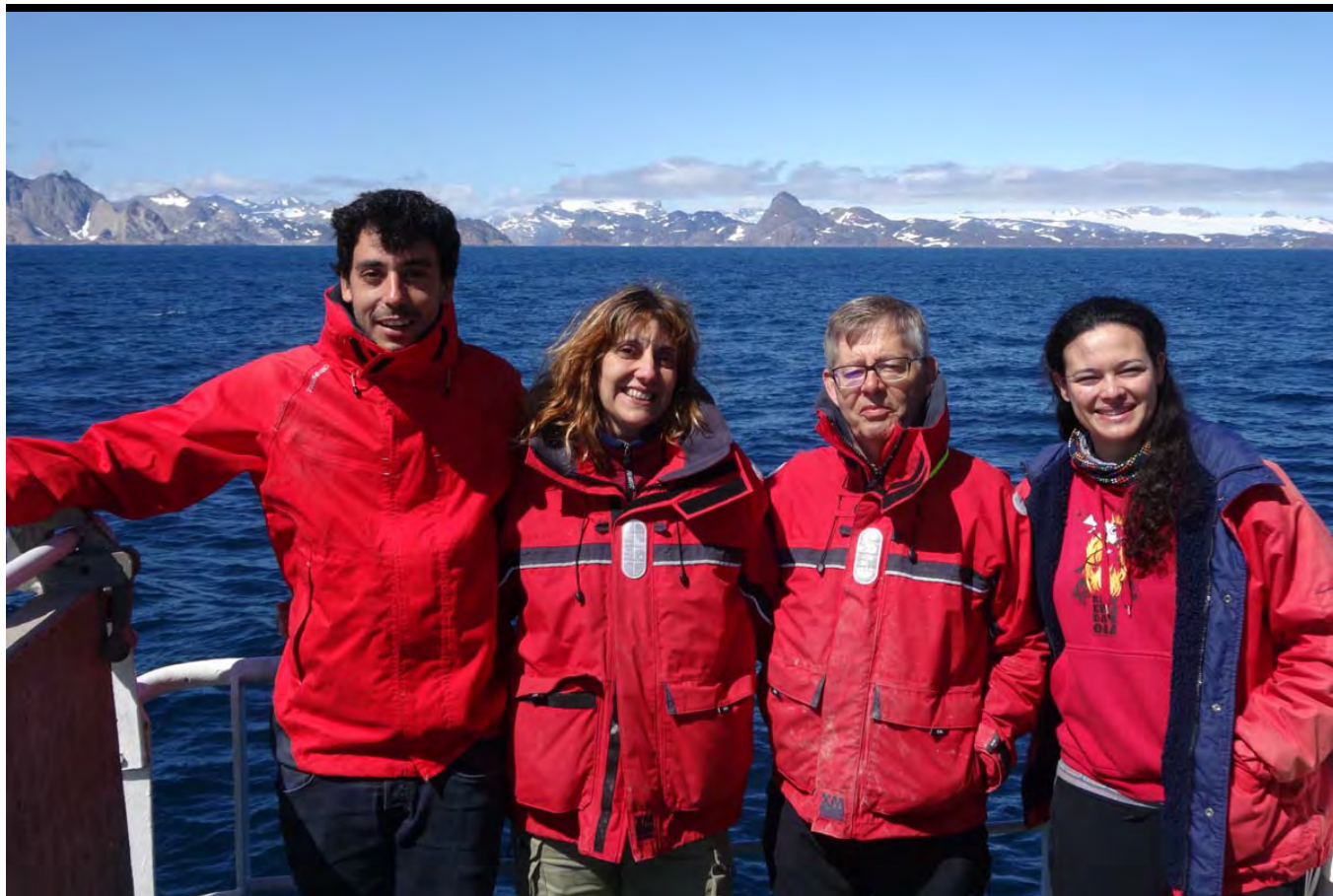
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# A campaña BOCATS remata a súa primeira fase de recollida de sedimentos no Atlántico Norte

## Ourense

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Nace 'Cómaros', revista interdisciplinar de pensamento galego

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18 de xullo de 2016  
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Negociación da RPT do PAS funcionario

Axenda

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Martes, 19 de xullo do 2016

O grupo XM1 encárgase, por primeira vez, da recollida e análise das mostras sedimentarias

## A campaña BOCATS remata a súa primeira fase de recollida de sedimentos no Atlántico Norte

Os datos obtidos, xunto cos da columna de auga, permitirán estudar os fluxos do ciclo de carbono

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### Ma del Carmen Echevarría | Vigo

De “moi positiva” cualifica docente o e investigador do Departamento de Xeociencias Mariñas e Ordenación do Territorio da Universidade de Vigo Guillermo Francés a primeira fase da campaña Bocats, despois que o buque oceanográfico Sarmiento de Gamboa arribase ás costas de Groenlandia. Atrás, queda algo máis dun mes de navegación por augas do Atlántico Norte no transecto comprendido entre Vigo e Groenlandia (sección OVIDE), no que persoal do Instituto de Investigación Mariñas do CSIC en Vigo e do Ifremer, xunto ao da Universidade de Vigo, mediu diversas propiedades físicas e químicas da columna de auga (pH, alcalinidade, concentración en CO2, osíxeno, nutrientes, etc.) en 99 estacións separadas entre si uns 30 quilómetros de media, cumpríndose así un dos obxectivos da campaña, como é a caracterización das masas de auga ao longo dun transecto que se repite cada dous anos desde 2002. “Por primeira vez, nesta serie de medidas, estanse a obter mostras de sedimentos nos mesmos puntos. Ata o de agora recuperamos sedimentos en 26 puntos e nos próximos días completaremos o transecto prospectando un mínimo de 25 estacións máis na conca de Irminger”, explica Francés, ao que acompañan en representación da Universidade de Vigo a tamén investigadora Irene Alejo e os estudantes Susa Álvarez e Víctor Pelayo.

As mostras de sedimentos superficiais recollidas en todas as estacións acadan un espesor comprendido entre os 20 e os 35 cm. e tendo en conta que as análises que os investigadores e investigadoras vigueses pretenden facer son de cada centímetro, o total de mostras a estudar superará as 1300. “Isto implica que a cantidade de datos e información que obteremos nos permitirá realizar unha caracterización detallada do sedimento e da súa relación coas masas de auga do fondo”, explica Francés, que destaca a importancia que ten á hora de calcular os fluxos do ciclo de carbono, non restrinxirse unicamente á columna de auga, como ocorre na maioría de estudos realizados, senón introducir no cálculo a parte que, aínda que minoritaria, non desprezable, vai aos sedimentos ou, eventualmente, que os sedimentos están a devolver ao océano. A campaña BOCATS, *Biennial Observation of Carbon, Acidification, Transport and Sedimentation in the North Atlantic, Observación bienal do carbono, acidificación, transporte e sedimentación no Atlántico Norte*, é un proxecto financiado polo Mineco con máis de 158.000 euros (sen incluír a campaña), que lidera o investigador do Departamento de Oceanografía do Instituto de Investigacións Mariñas do CSIC en Vigo Fiz Fernández.

### Chegada a Reikiavik e posterior análise dos sedimentos

Tras pasar unhas horas ao abrigo da costa de Groenlandia por mor dunha forte borrasca, que provocou rachas de vento de 45 nos e olas de ata cinco metros, o Sarmiento de Gamboa iniciou un percorrido inverso, dedicado exclusivamente á recuperación dos sedimentos do fondo, para a continuación afrontar os derradeiros días da campaña que se desenvolverá no tramo paralelo á dorsal de Reykjanes e continuar o transecto (sección RREX), seguindo a orientación desta cordilleira submarina ata finalizar na capital de Islandia, onde agardan chegar a finais de mes.

“Finalizada a campaña BOCATS e unha vez en terra todas as análises dos sedimentos son responsabilidade do grupo XM1, non só dos investigadores que embarcamos, senón do resto do equipo. Isto inclúe análises de tamaño de gran, de composición, de contido en materia orgánica, de microfósiles e datación de sedimentos”, detalla o investigador do Departamento de Xeociencias Mariñas e Ordenación do Territorio sobre o traballo que lles agarda e cuxos resultados serán relacionados cos obtidos na columna de auga polo grupo do IIM e de Ifremer. Así mesmo, os e as investigadoras da Universidade de Vigo pretenden establecer colaboracións con outros grupos para levar a cabo outras análises complementarias que eles non son quen de abordar.



# La memoria de Aida Fernández impulsa al “Sarmiento”

Los miembros de la campaña Bocats recuerdan a la investigadora viguesa ► Sus compañeros del CSIC activan una web para homenajearla

S. PENELAS

Cada reunión de los científicos de la campaña Bocats a bordo del *Sarmiento de Gamboa* arranca con un inevitable recuerdo a la valía profesional y humana de la investigadora viguesa Aida Fernández Ríos. La expedición por el Atlántico norte se ha convertido este año en un homenaje a quien fue una de sus precursoras y el director científico de la travesía, Fiz Fernández, su compañero del Instituto de Investigaciones Marinas-CSIC, ha hecho coincidir la navegación con la puesta en marcha de una web en recuerdo de la científica fallecida en diciembre. Colegas de todo el mundo, familiares y amigos han enviado ya sus testimonios en homenaje a una mujer que todos coinciden en definir como vital, alegre, cálida y muy trabajadora.

“Está siendo una campaña difícil y todos recordamos su figura y su talento. Desde el triste fallecimiento, mucha gente ha ido dejando sus testimonios porque Aida tenía muy buen trato y allí donde iba hacía amigos, por eso nos pareció oportuno hacer la web. Tras unos meses en pruebas, el viernes la añadimos al portal del Instituto de Investigaciones Marinas para que quien lo desee

pueda seguir contribuyendo. Antonio Padín, que fue uno de sus doctorandos favoritos, explicó la iniciativa a bordo el otro día y mucha gente quería adherirse”, explica Fernández por teléfono desde el Mar de Irming, a unas 200 millas de Groenlandia.

Una veintena de investigadores del IIM, la Universidad de Vigo y el Ifremer francés cubren este transecto desde la Península para estudiar los cambios en los movimientos de las corrientes y la acidificación del océano a consecuencia de la absorción del CO<sub>2</sub>, aspectos clave para determinar los efectos del cambio climático. “La primera campaña se hizo en 2002 y desde entonces la repetimos cada dos años. En 2012, Aida fue la jefa científica y esta edición queremos que sea en honor a su memoria”, añade.

No es el único reconocimiento en memoria de la investigadora viguesa, pues el V Simposio Internacional de Ciencias del Mar, que se celebra la próxima semana en Alicante, ha decidido que el premio a la mejor presentación realizada por un alumno de doctorado lleve su nombre.

“Era muy vital y, aunque estaba a dos años de su jubilación definitiva, conservaba esa energía. Siempre fo-



Foto de familia de los investigadores y la tripulación en la cubierta del buque “Sarmiento de Gamboa”.



Detalle de la web en homenaje a Aida Fernández.

mentó que la gente joven trabajase en oceanografía y CO<sub>2</sub>. Formaba parte de la comisión de docencia del programa de doctorado del Campus del Mar y tenía una labor muy activa y dinamizadora”, destaca su colega.

El simposio también destaca el empuje de una científica que empe-

zó en 1972 como auxiliar de laboratorio en el mismo centro que llegaría a dirigir entre 2006 y 2011 y en el que alcanzó la máxima categoría dentro del CSIC.

“Recorrió todos los peldaños y siempre cuidando de la gente y, como dicen ahora, de buen rollo. Su vocación por la biología marina se despertó mientras trabajaba con Fernando Fraga y ella hizo las primeras medidas de PH en las costas gallegas. Era una trabajadora incansable y muchos le llamaban la hormiguita”, recuerda Fernández, que ha titulado con el acrónimo ALDA el último proyecto de investiga-

ción sobre acidificación en rías que ha solicitado al plan nacional de I+D.

Aida Fernández sumaba más de 500 días en el mar. Dirigió muchas de las 30 campañas oceanográficas nacionales e internacionales en las que participó, en varias ocasiones a bordo del *Sarmiento de Gamboa*, y representaba a España en diferentes comités.

El Atlántico y la meteorología parecen haberse sumado al homenaje y la campaña Bocats está transcurriendo a la perfección desde su salida de Vigo el pasado junio: “El ambiente es muy bueno y todo está yendo francamente bien. Hemos hecho 70 estaciones bajando la roseta hasta el fondo, de forma que tenemos perfiles hasta de más de 5.000 metros de profundidad. Y el grupo de la Universidad, con Guillermo Francés e Irene Alejo, lleva ya 30 testigos de sedimentos recogidos y en esta última fase intensificarán la frecuencia”. Tras más de un mes de trabajo, los investigadores arribarán a Reikiavik el 28 o el 29 de julio.

## Una de las primeras mujeres a bordo de oceanográficos

Cuando Aida Fernández participó en su primera campaña en 1974 solo había otra mujer entre la tripulación de científicos. Años después se convirtió en la primera directora del Instituto de Investigaciones Marinas de Bouzas y en 2001 recibió el premio Galega Destacada en reconocimiento a una trayectoria que el año pasado la convertía también en la tercera mujer que ingresaba en la Reak Academia Galega de Cien-

cias.

“Es curioso pero en esta campaña, además de un grupo de investigadoras importante, coinciden la capitana María Ángeles Campos [la ourensana que en 2014 rescató a 194 sirios en el Mediterráneo], varias alumnas en el puente de mando y también hay trabajadoras en máquinas. A Aida le alegraría porque también destacó por su trabajo a favor de la mujer”, celebra Fiz Fernández.



Investigadoras e integrantes de la tripulación que participan en la campaña a bordo del “Sarmiento”.

## **DATOS DE AUDIENCIA DA BITÁCORA 'A BORDO DO SARMIENTO DE GAMBOA'**

Lecturas totales en GCiencia: 9.145 clicks  
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### **“Os oceanógrafos físicos franceses abordan o barco”**

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### **“Liñas e aparellos para o futuro”**

Clicks de lectores: 233 Alcance en Facebook: 2164 personas/ 42 Me gusta / 4 compartido

### **“Groenlandia á vista!”**

Clicks de lectores: 679 Alcance en Facebook: 3.381 personas/ 65 Me gusta / 2 compartido

### **“Box Corer e ‘Equipo Lodo’ en acción”**

Clicks de lectores: 335 Alcance en Facebook: 2563 personas/ 39 Me gusta / 3 compartido

### **“Somos de cores”**

Clicks de lectores: 499 Alcance en Facebook: 5.286 personas/ 122 Me gusta / 17 compartido

### **“Por alusións”**

Clicks de lectores: 723 Alcance en Facebook: 5.231 personas/ 94 Me gusta / 25 compartido

### **“No Sarmiento de Gamboa... Non todo vai ser traballar!”**

Clicks de lectores: 612 Alcance en Facebook: 9.466 personas/ 200 Me gusta / 23 compartido

### **“Con Rosita, no medio do Atlántico”**

Clicks de lectores: 436 Alcance en Facebook: 6.653 personas/ 97 Me gusta / 4 compartido

### **“Tocando fondo a 4.000 metros baixo do mar”**

Clicks de lectores: 843 Alcance en Facebook: 9.888 personas/ 202 Me gusta / 26 compartido

### **“A bordo do Sarmiento de Gamboa”**

Clicks de lectores: 2.631 Alcance en Facebook: 12.880 personas/ 264 Me gusta / 46 compartido

## 15. Listings and figures of the CTD parameters

Figures of the various sections generated from the cruise data are presented below, followed by listings and detailed figures profile by profile.

### 15.1. Remarks

#### a) Description of the profiles:

1. The latitude and longitude indicate the positioning of the ship at the beginning of the descent profile.
2. The depth indicated is a calculation obtained by summing the maximum pressure (in meters) reached by the CTD and the bottom-pinger distance.

b) The temperature, salinity and dissolved oxygen measurements come from the downcast profile of the ctd.

c) The measurements shown are extracted from the files of type **\_clt.nc**, the listed levels are:

- . the first level
- . every 10 dbar up to 50 dbar
- . every 50 dbar from 50 dbar to the bottom
- . the last level

d) For the missing pressure levels (mean not calculated in the data acquisition), the measurements are interpolated. Near the surface, the measures are extrapolated up to level 1 by copying those of the first reduced level.

e) Listings and plots show the results as a function of the pressure (expressed in dbar).

f) The profiles are numbered sequentially from 1 to 136.

## 15.2. Sections

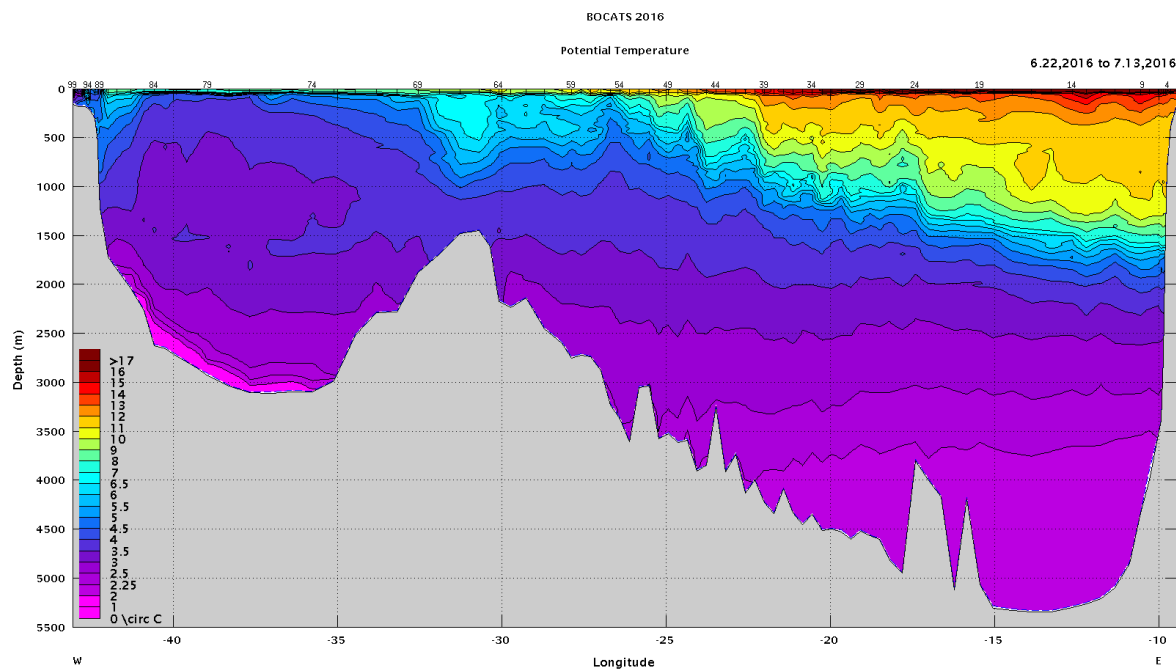


Figure 57: Potential Temperature.

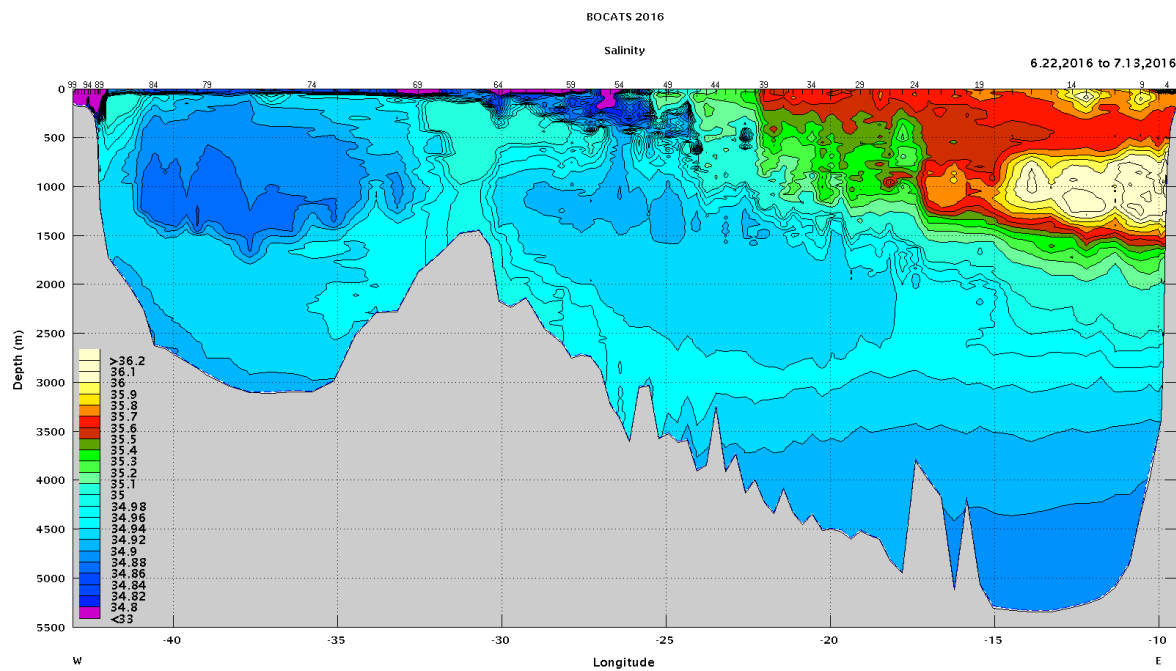


Figure 58: Salinity.



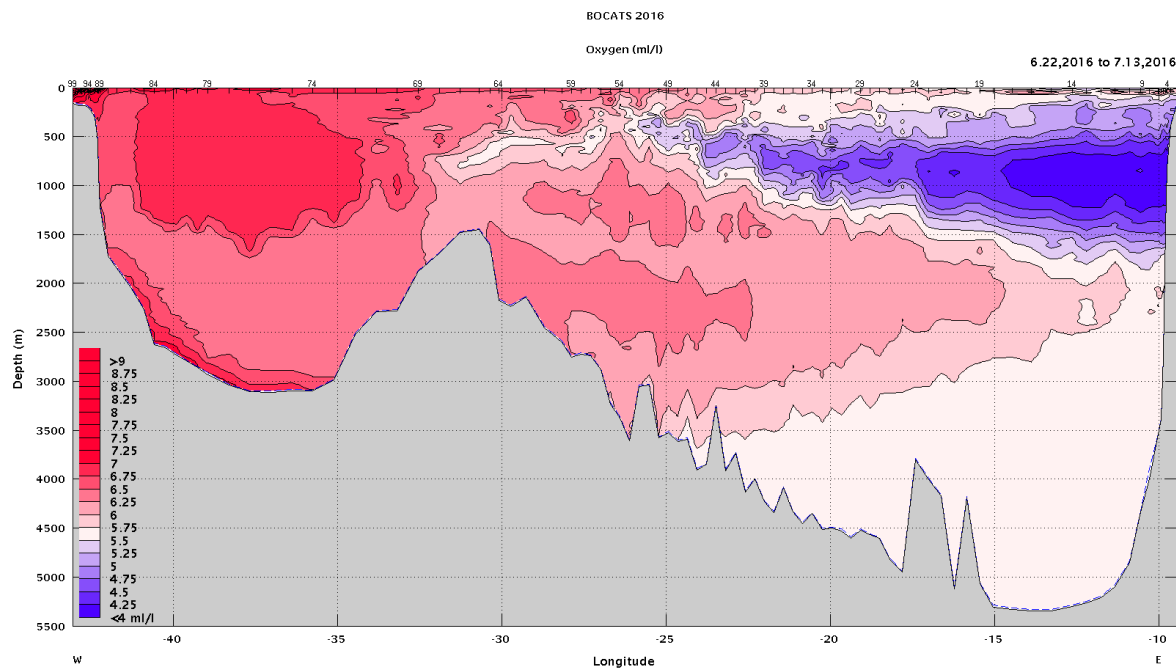


Figure 59: Oxygen (ml/l).

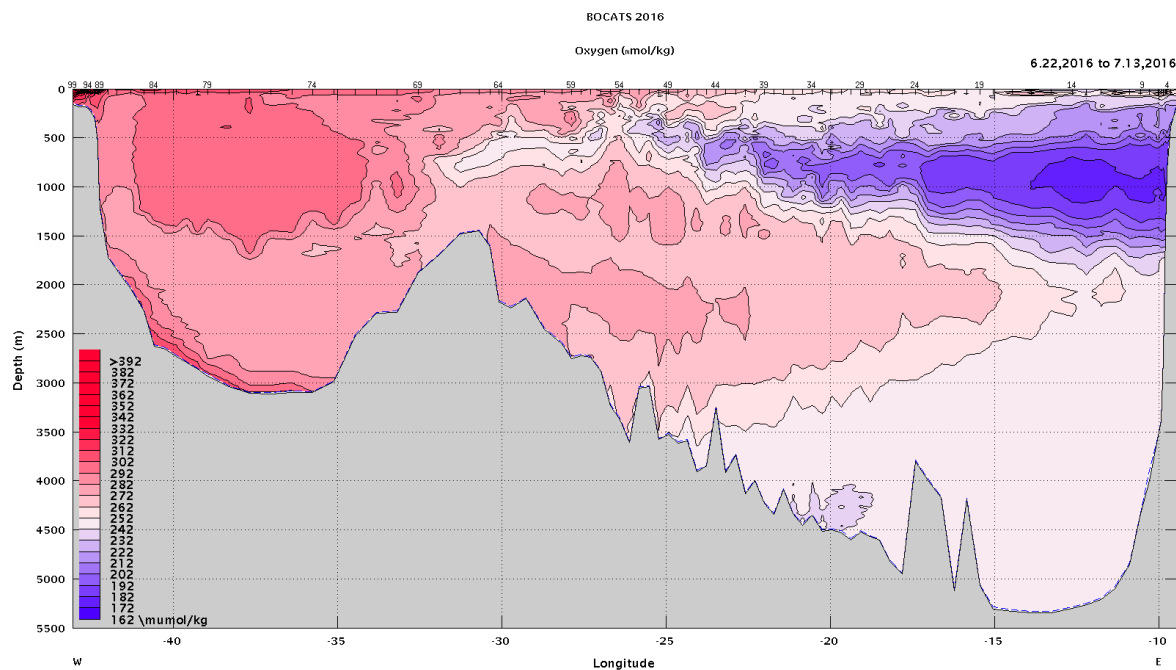


Figure 60: Oxygen ( $\mu\text{mol/kg}$ ).

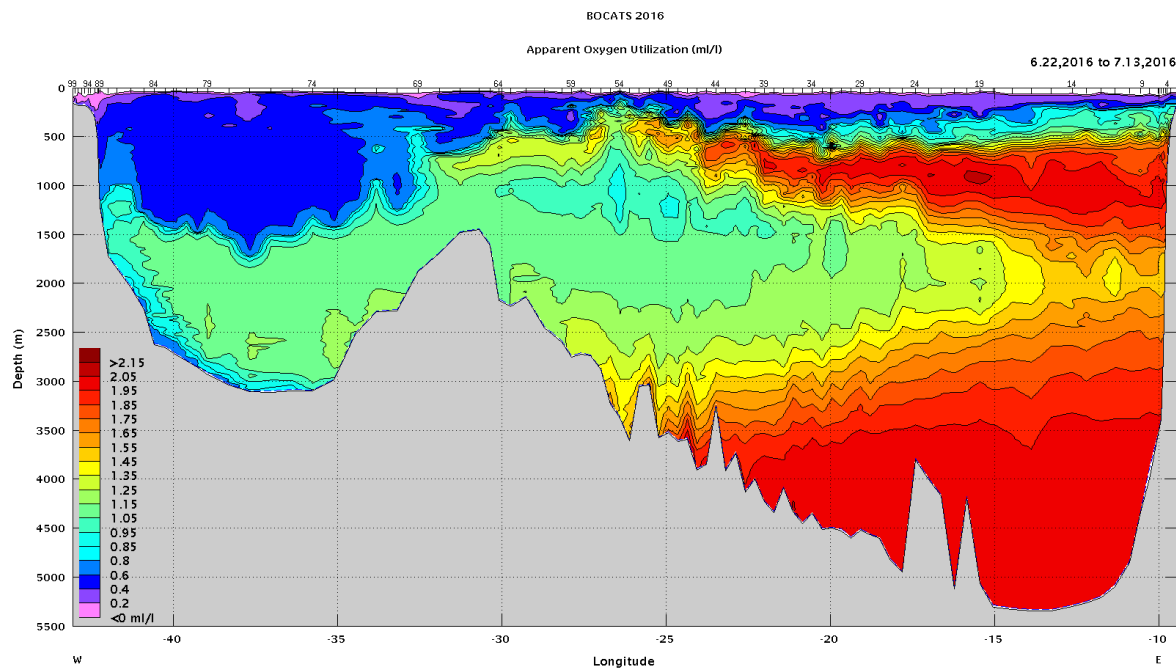


Figure 61: Apparent Oxygen Utilization.

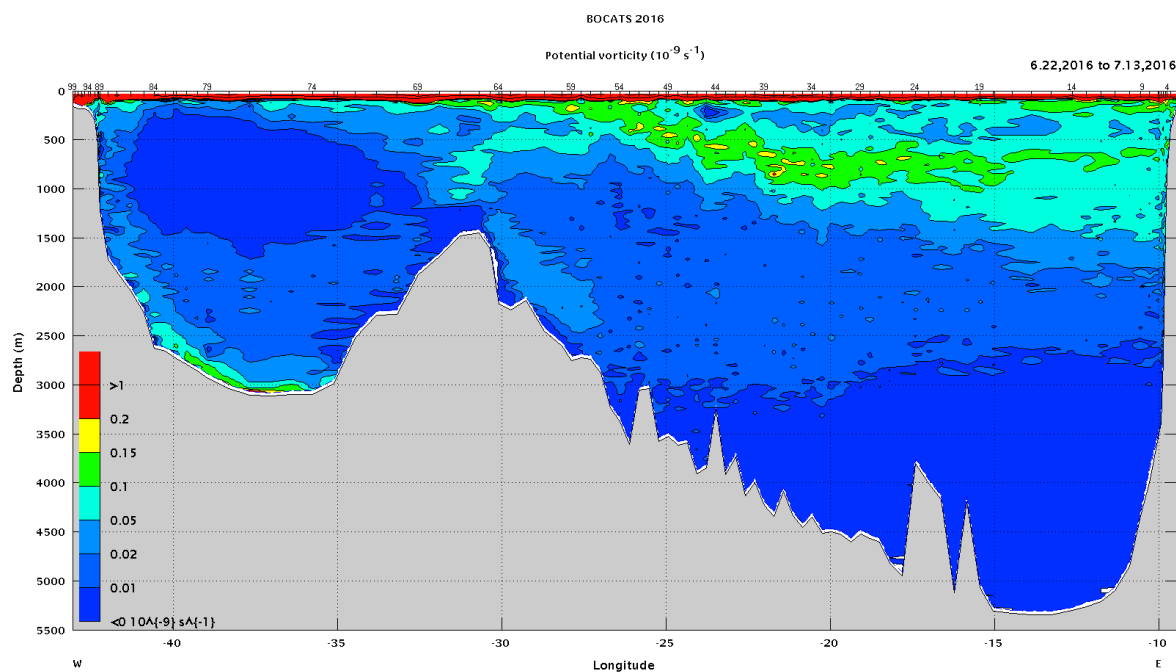


Figure 62: Potential Vorticity.

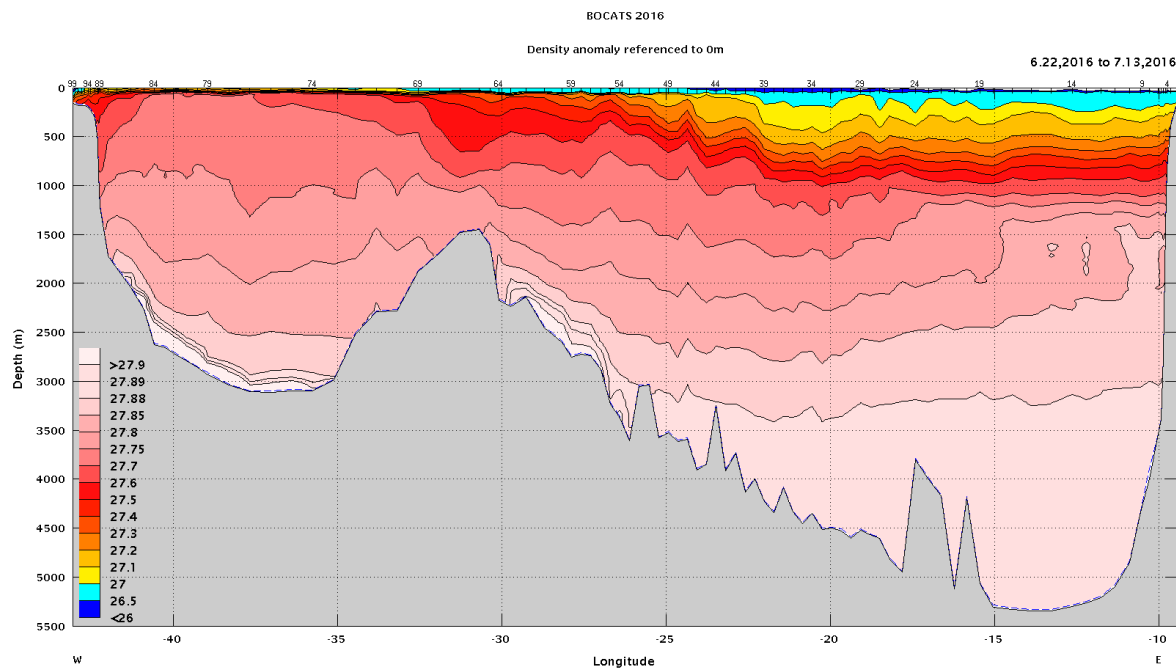


Figure 63: Density anomaly referenced to 0 m.

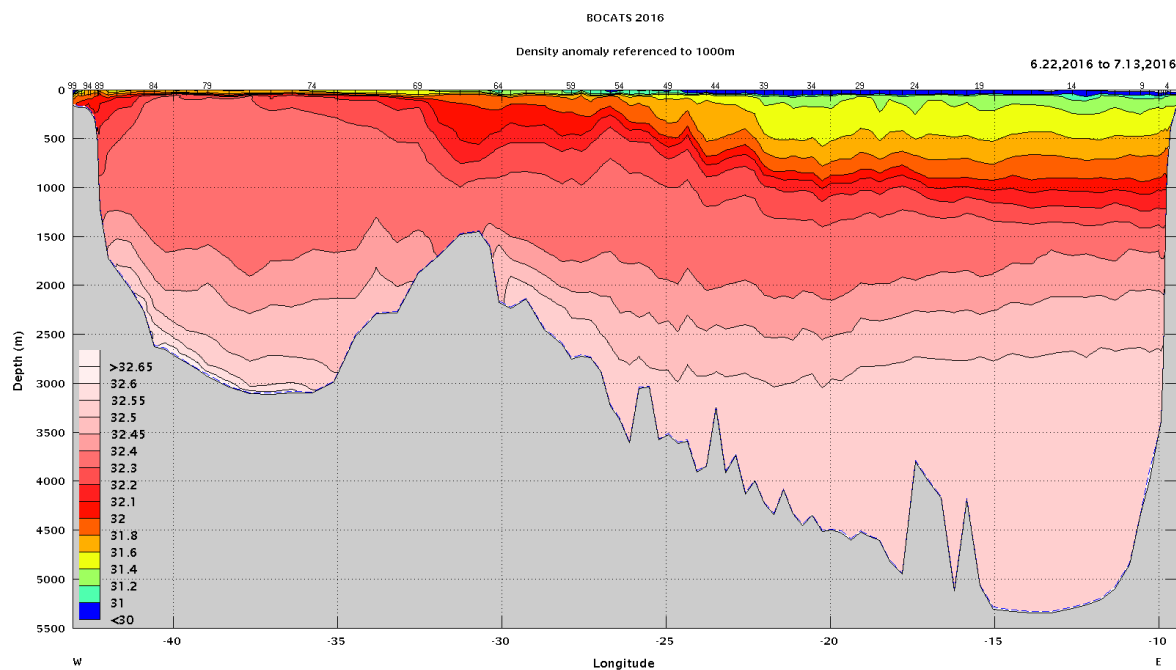


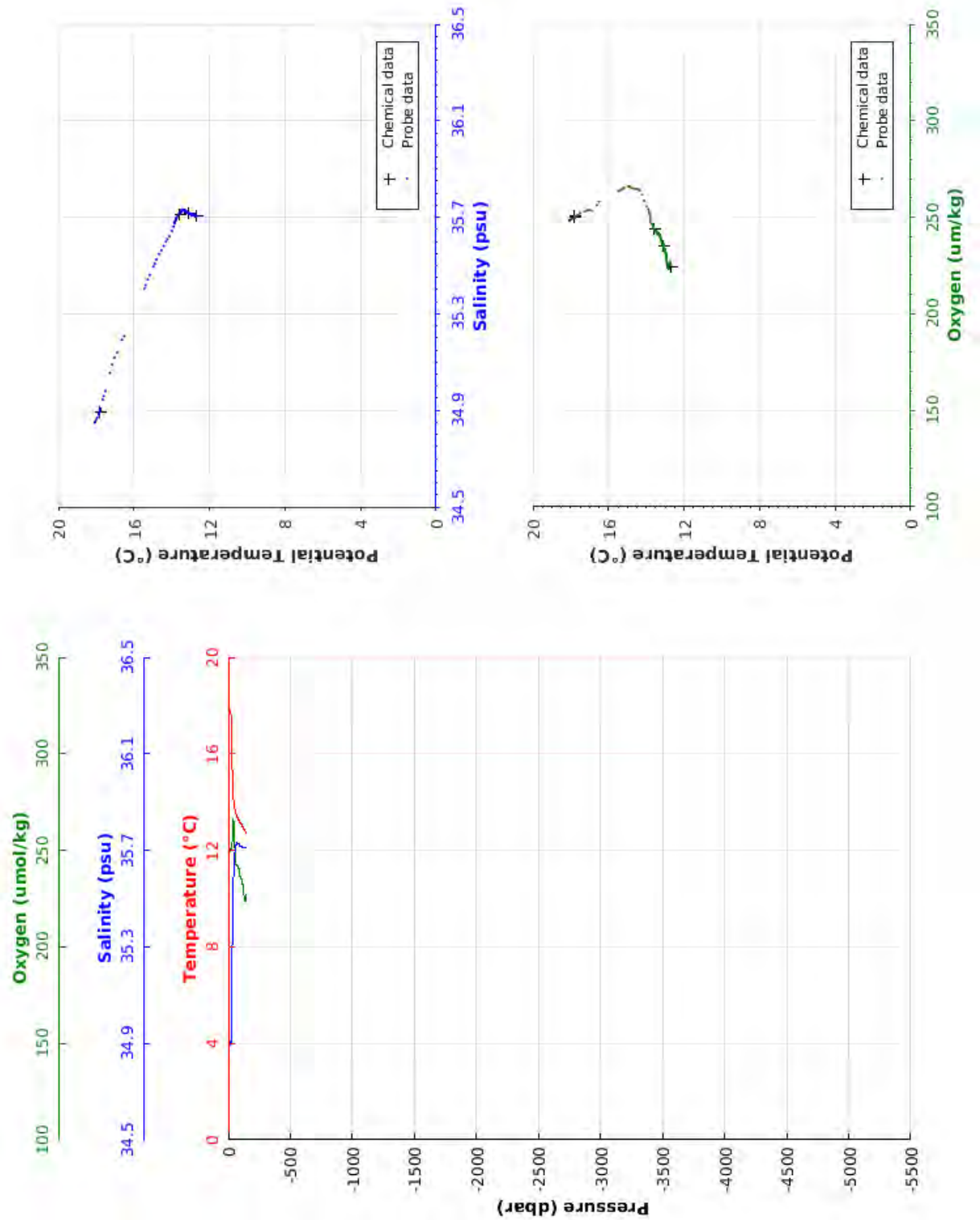
Figure 64: Density anomaly referenced to 1000 m.

### 15.3. Listings and figures

92

Cruise	: BOCATS 2016			
Station	: 1	Cast	: 1	
Date	: 22/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 155 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 19.98 W 009 27.85			

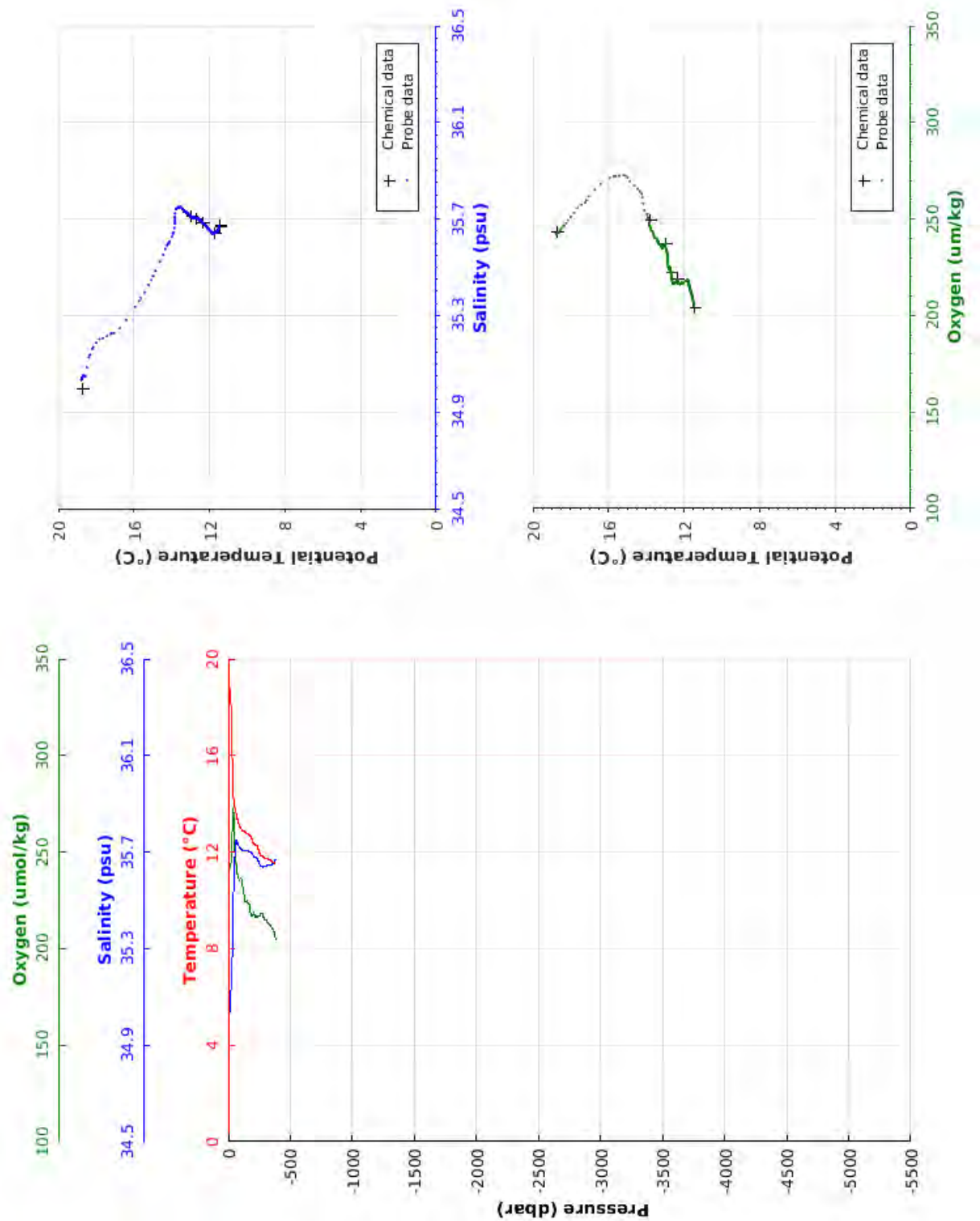
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.055	34.853	248.6	18.055
10.0	17.783	34.899	250.2	17.781
20.0	17.786	34.906	250.3	17.782
30.0	15.450	35.406	263.6	15.445
40.0	14.312	35.601	263.8	14.306
50.0	13.786	35.692	249.2	13.779
100.0	13.112	35.716	235.8	13.098
144.0	12.742	35.704	225.8	12.722





Cruise	: BOCATS 2016		
Station	: 2	Cast	: 1
Date	: 22/06/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 388 m	Organism	: CSIC/IIM VIGO
Position	: N 40 20.07 W 009 38.59		

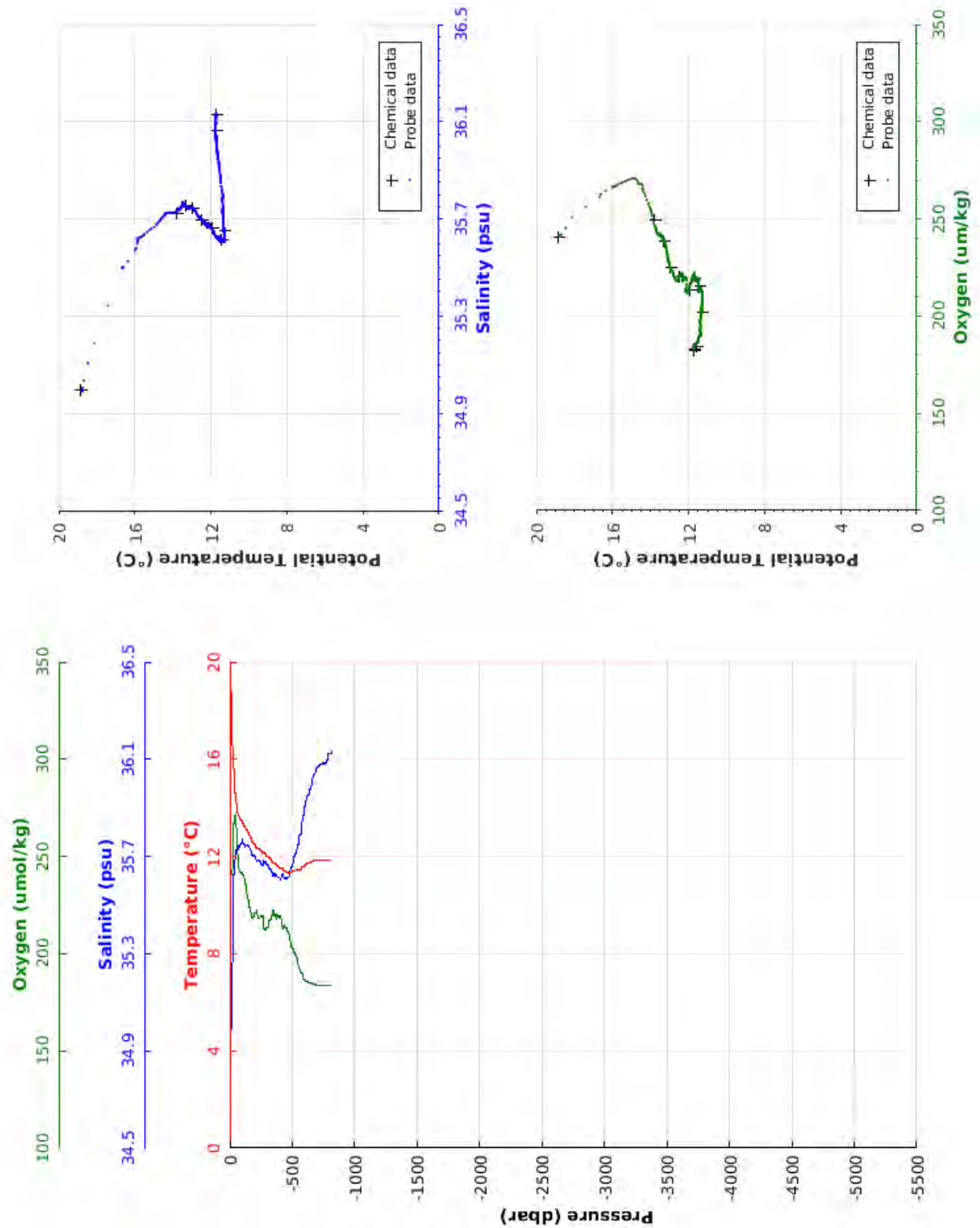
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.778	35.035	242.5	18.778
10.0	18.763	35.041	242.1	18.761
20.0	18.221	35.161	247.9	18.217
30.0	16.411	35.281	268.2	16.407
40.0	14.462	35.551	265.6	14.456
50.0	13.823	35.679	248.8	13.816
100.0	13.023	35.712	236.4	13.009
150.0	12.769	35.704	223.9	12.748
200.0	12.380	35.683	218.6	12.353
250.0	12.040	35.654	217.3	12.007
300.0	11.751	35.643	214.8	11.712
350.0	11.607	35.649	210.2	11.562
381.0	11.534	35.671	205.2	11.485



Station: 2

Cruise	: BOCATS 2016			
Station	: 3	Cast	: 1	
Date	: 22/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 819 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.04			
	W 009 46.08			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.794	34.991	241.5	18.794
10.0	18.795	34.992	241.5	18.794
20.0	16.668	35.497	261.3	16.665
30.0	15.699	35.625	267.9	15.694
40.0	14.719	35.691	269.8	14.713
50.0	14.319	35.725	263.2	14.312
100.0	13.411	35.760	240.6	13.397
150.0	12.956	35.743	224.6	12.935
200.0	12.509	35.699	220.9	12.482
250.0	12.221	35.670	219.6	12.188
300.0	12.025	35.666	213.2	11.986
350.0	11.721	35.622	220.9	11.675
400.0	11.513	35.605	219.4	11.461
450.0	11.359	35.607	213.4	11.302
500.0	11.378	35.660	202.9	11.313
550.0	11.454	35.764	193.6	11.383
600.0	11.647	35.911	186.3	11.569
650.0	11.762	35.982	184.8	11.676
700.0	11.851	36.068	183.9	11.757
750.0	11.856	36.082	183.6	11.756
800.0	11.842	36.125	183.4	11.734
815.0	11.842	36.127	183.5	11.733

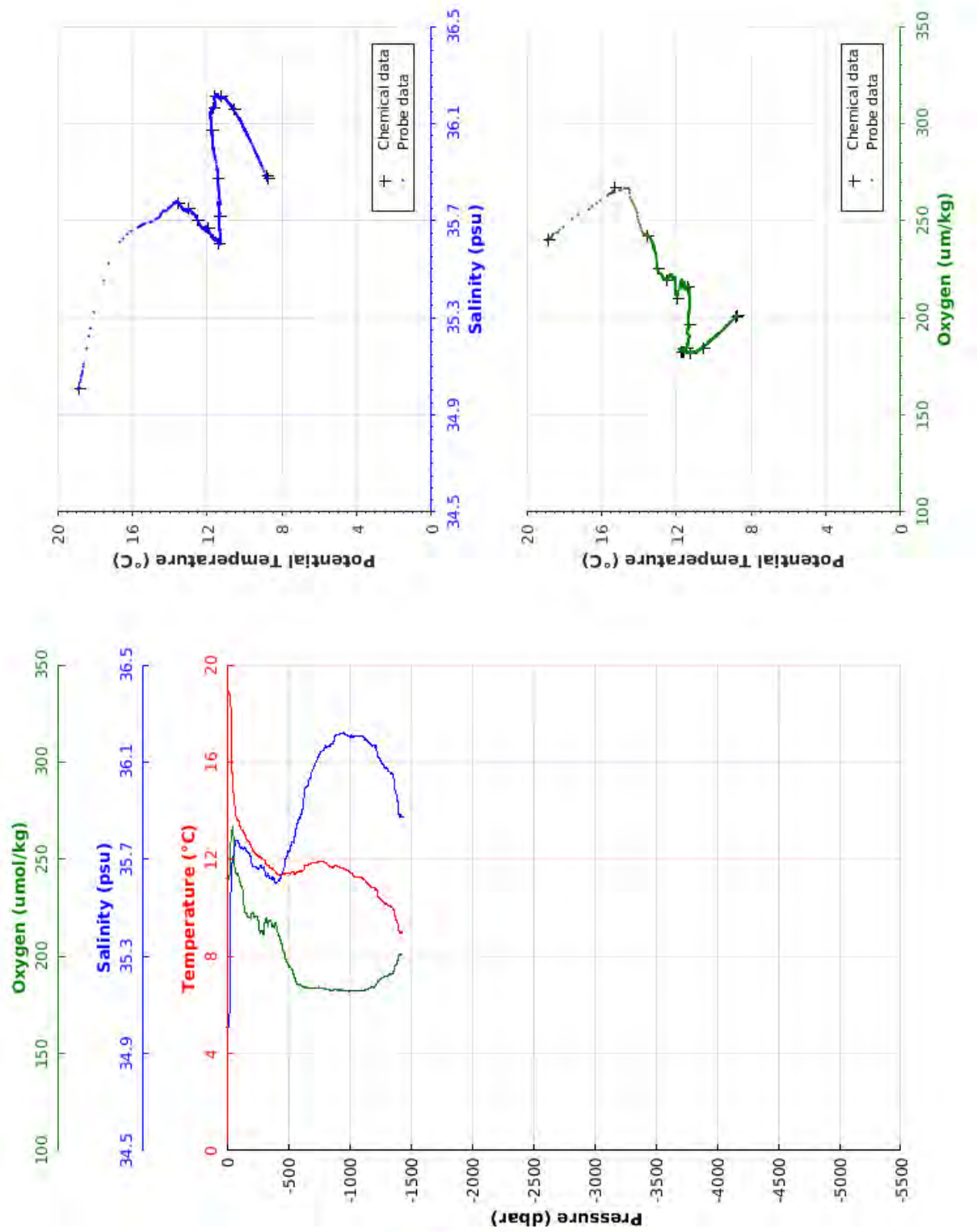


Station: 3

Cruise	: BOCATS 2016		
Station	: 4	Cast	: 1
Date	: 22/06/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1437 m	Organism	: CSIC/IIM VIGO
Position	: N 40 20.04		
	W 009 48.30		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.878	35.007	240.2	18.877
10.0	18.879	35.007	240.0	18.877
20.0	18.859	35.013	240.3	18.856
30.0	18.442	35.174	243.6	18.437
40.0	15.698	35.673	262.8	15.692
50.0	15.309	35.690	264.6	15.301
100.0	13.452	35.763	241.7	13.437
150.0	12.960	35.745	223.7	12.939
200.0	12.519	35.697	219.4	12.492
250.0	12.145	35.662	220.6	12.112
300.0	11.966	35.664	212.2	11.926
350.0	11.672	35.625	218.1	11.626
400.0	11.408	35.602	217.2	11.356
450.0	11.354	35.637	206.7	11.296
500.0	11.419	35.731	196.2	11.354
550.0	11.382	35.769	190.6	11.311
600.0	11.491	35.870	185.3	11.413
650.0	11.761	35.995	184.0	11.675
700.0	11.845	36.067	183.6	11.752
750.0	11.911	36.123	183.8	11.811
800.0	11.845	36.160	183.5	11.737
850.0	11.687	36.168	182.7	11.573
900.0	11.715	36.211	183.0	11.595
950.0	11.612	36.220	182.6	11.486
1000.0	11.478	36.207	182.1	11.346
1050.0	11.267	36.205	182.4	11.129
1100.0	11.249	36.207	182.3	11.104
1150.0	11.000	36.186	183.2	10.850
1200.0	10.845	36.170	184.1	10.689
1250.0	10.374	36.112	188.0	10.216
1300.0	10.175	36.078	189.6	10.012
1350.0	10.015	36.053	191.0	9.847
1400.0	9.244	35.925	198.1	9.077
1441.0	8.943	35.870	201.2	8.774

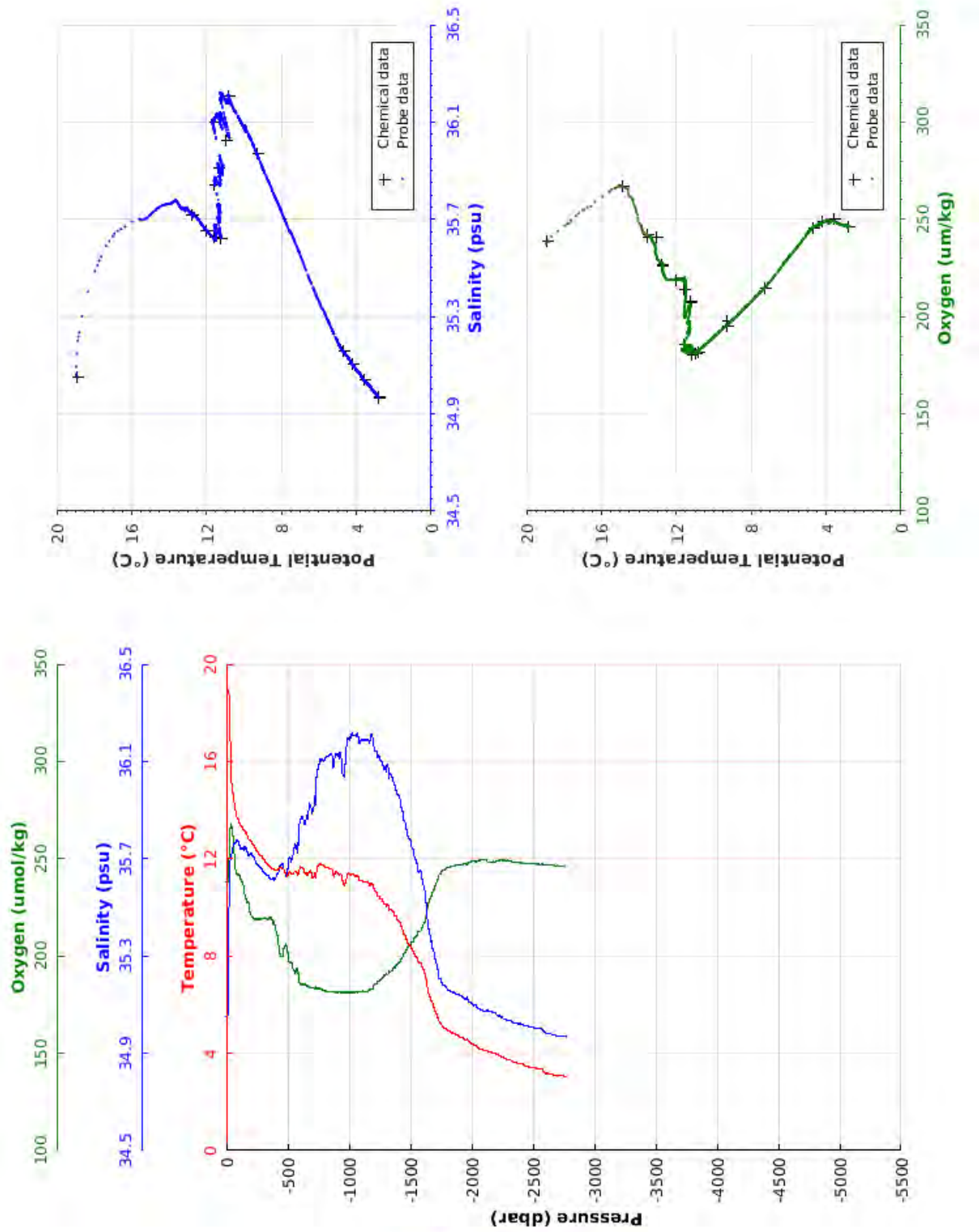




**Station: 4**

Cruise	: BOCATS 2016			
Station	: 5	Cast	: 1	
Date	: 23/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 2746 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.06 W 009 52.76			

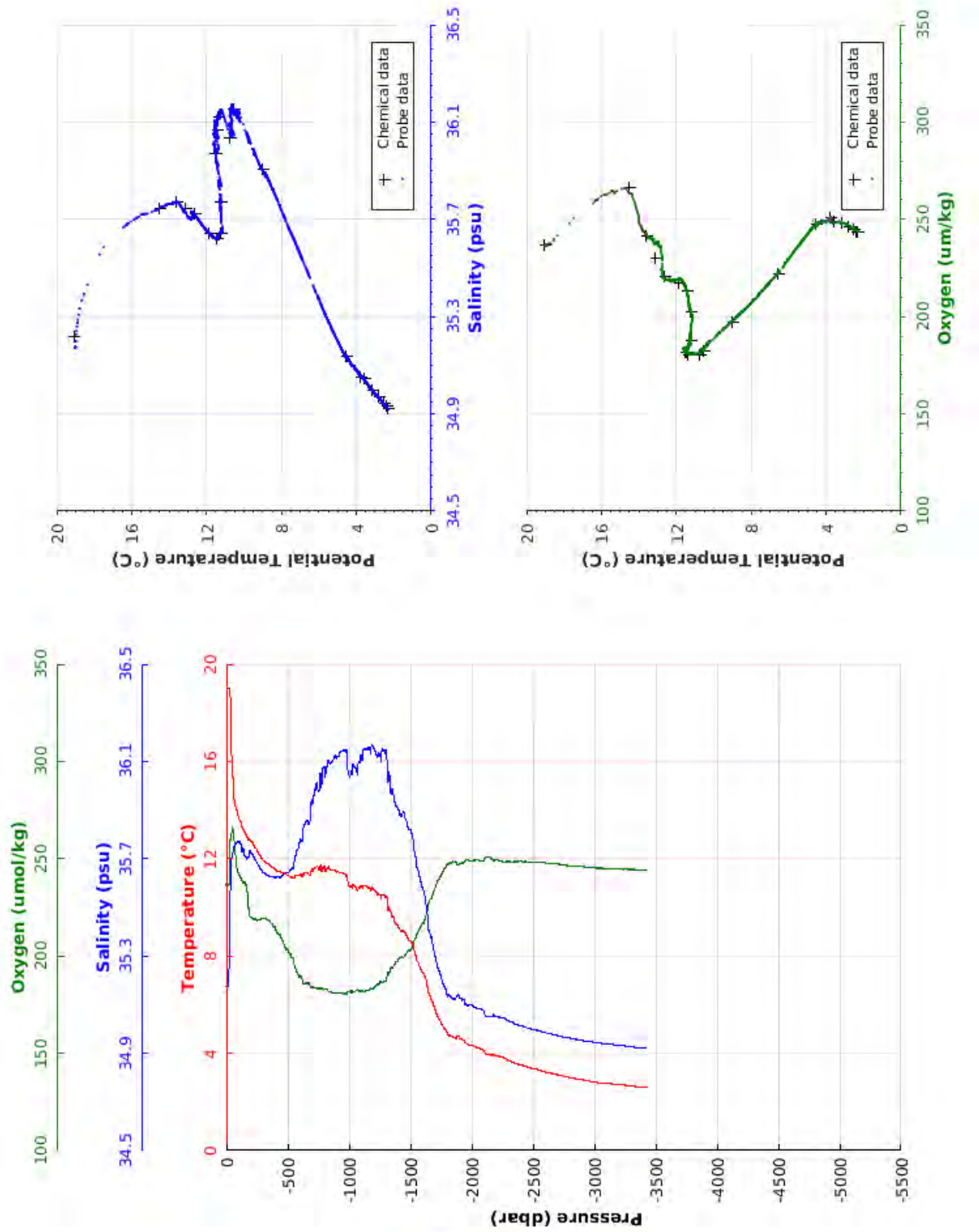
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.957	35.053	238.4	18.957
10.0	18.959	35.053	238.0	18.958
20.0	18.843	35.217	238.8	18.839
30.0	17.023	35.630	254.5	17.018
40.0	15.273	35.703	265.9	15.267
50.0	14.901	35.728	266.6	14.894
100.0	13.577	35.771	241.7	13.563
150.0	13.149	35.745	233.7	13.128
200.0	12.733	35.724	222.4	12.706
250.0	12.294	35.679	219.2	12.260
300.0	11.988	35.649	219.4	11.949
350.0	11.685	35.624	219.4	11.639
400.0	11.548	35.619	215.7	11.496
450.0	11.614	35.677	200.3	11.556
500.0	11.339	35.648	203.6	11.275
550.0	11.430	35.734	193.1	11.359
600.0	11.653	35.847	186.8	11.574
650.0	11.338	35.846	185.3	11.254
700.0	11.235	35.885	183.9	11.145
750.0	11.711	36.075	183.2	11.611
800.0	11.697	36.103	182.2	11.590
850.0	11.588	36.131	181.7	11.476
900.0	11.441	36.129	181.5	11.323
950.0	10.986	36.047	181.5	10.864
1000.0	11.366	36.189	181.3	11.234
1050.0	11.290	36.207	181.4	11.152
1100.0	11.096	36.188	181.9	10.953
1150.0	11.024	36.188	181.9	10.874
1200.0	10.820	36.174	183.8	10.664
1250.0	10.410	36.114	187.4	10.251
1300.0	10.135	36.079	189.7	9.973
1350.0	9.845	36.036	192.5	9.679
1400.0	9.466	35.966	196.0	9.297
1450.0	8.866	35.856	201.1	8.697
1500.0	8.417	35.775	205.5	8.246
1550.0	7.956	35.691	210.2	7.785
1600.0	7.498	35.615	214.4	7.326
1650.0	6.433	35.410	227.3	6.268
1700.0	5.795	35.303	234.6	5.633
1750.0	5.206	35.204	242.2	5.047
1800.0	4.967	35.167	245.0	4.805
1850.0	4.819	35.150	246.3	4.654
1900.0	4.688	35.139	246.6	4.520
1950.0	4.547	35.122	247.6	4.376
2000.0	4.399	35.104	248.5	4.225
2050.0	4.211	35.085	249.2	4.035
2100.0	4.132	35.074	249.8	3.952
2150.0	4.056	35.071	248.5	3.872
2200.0	3.985	35.063	248.3	3.798
2250.0	3.870	35.049	249.2	3.679
2300.0	3.732	35.035	249.1	3.539
2350.0	3.618	35.026	248.2	3.422
2400.0	3.574	35.021	247.9	3.374
2450.0	3.485	35.013	247.5	3.281
2500.0	3.423	35.007	247.3	3.215
2550.0	3.376	35.002	247.2	3.164
2600.0	3.165	34.980	246.9	2.952
2650.0	3.157	34.980	246.6	2.939
2700.0	3.072	34.971	246.4	2.851
2750.0	3.070	34.971	246.2	2.844
2778.0	3.037	34.967	246.4	2.808



Station: 5

Cruise	: BOCATS 2016			
Station	: 6	Cast	: 1	
Date	: 23/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3393 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.05 W 009 56.52			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.997	35.173	236.5	18.997	3050.0	2.785	34.941	245.2	2.534
10.0	18.999	35.174	236.3	18.997	3100.0	2.763	34.939	245.0	2.507
20.0	18.998	35.175	236.7	18.995	3150.0	2.740	34.936	244.8	2.479
30.0	18.778	35.333	237.7	18.773	3200.0	2.714	34.933	244.7	2.449
40.0	16.261	35.678	260.1	16.255	3250.0	2.689	34.930	244.6	2.418
50.0	15.473	35.719	264.4	15.466	3300.0	2.661	34.927	244.5	2.386
100.0	13.696	35.768	243.0	13.681	3350.0	2.630	34.924	244.4	2.350
150.0	13.058	35.715	238.2	13.037	3400.0	2.629	34.923	244.2	2.344
200.0	12.749	35.729	220.0	12.722	3437.0	2.612	34.921	244.1	2.324
250.0	12.351	35.685	218.8	12.317					
300.0	11.921	35.644	219.2	11.882					
350.0	11.742	35.630	218.6	11.696					
400.0	11.543	35.621	215.0	11.492					
450.0	11.418	35.627	209.5	11.360					
500.0	11.322	35.643	203.6	11.258					
550.0	11.201	35.660	198.8	11.131					
600.0	11.358	35.769	189.1	11.280					
650.0	11.444	35.852	186.1	11.360					
700.0	11.517	35.926	184.1	11.425					
750.0	11.522	35.978	183.4	11.424					
800.0	11.681	36.079	183.1	11.575					
850.0	11.565	36.090	181.4	11.452					
900.0	11.480	36.118	181.0	11.361					
950.0	11.415	36.145	180.9	11.289					
1000.0	10.875	36.049	181.5	10.747					
1050.0	10.846	36.079	181.6	10.711					
1100.0	10.888	36.126	181.5	10.746					
1150.0	10.818	36.149	182.3	10.670					
1200.0	10.736	36.157	183.4	10.582					
1250.0	10.494	36.127	186.0	10.335					
1300.0	10.460	36.146	186.9	10.295					
1350.0	9.612	35.970	194.1	9.449					
1400.0	9.232	35.909	197.3	9.066					
1450.0	9.017	35.890	199.3	8.846					
1500.0	8.626	35.821	202.9	8.453					
1550.0	7.875	35.681	209.9	7.705					
1600.0	7.305	35.581	216.4	7.135					
1650.0	6.425	35.417	226.2	6.261					
1700.0	5.841	35.311	234.0	5.678					
1750.0	5.284	35.219	240.7	5.123					
1800.0	4.818	35.145	246.5	4.658					
1850.0	4.630	35.121	248.7	4.468					
1900.0	4.635	35.130	247.0	4.468					
1950.0	4.436	35.101	249.2	4.267					
2000.0	4.327	35.097	248.7	4.154					
2050.0	4.213	35.083	249.3	4.037					
2100.0	4.102	35.072	249.1	3.922					
2150.0	3.927	35.049	250.9	3.746					
2200.0	3.897	35.050	249.4	3.711					
2250.0	3.828	35.047	248.6	3.638					
2300.0	3.702	35.033	248.6	3.510					
2350.0	3.605	35.023	248.5	3.409					
2400.0	3.519	35.013	248.8	3.320					
2450.0	3.448	35.005	248.5	3.245					
2500.0	3.368	34.998	248.2	3.161					
2550.0	3.306	34.992	247.9	3.095					
2600.0	3.231	34.985	247.9	3.017					
2650.0	3.172	34.979	247.6	2.953					
2700.0	3.116	34.973	247.3	2.894					
2750.0	3.050	34.967	246.9	2.824					
2800.0	3.005	34.963	246.3	2.775					
2850.0	2.944	34.957	246.1	2.710					
2900.0	2.916	34.954	245.9	2.677					
2950.0	2.865	34.949	245.7	2.622					
3000.0	2.812	34.944	245.4	2.565					

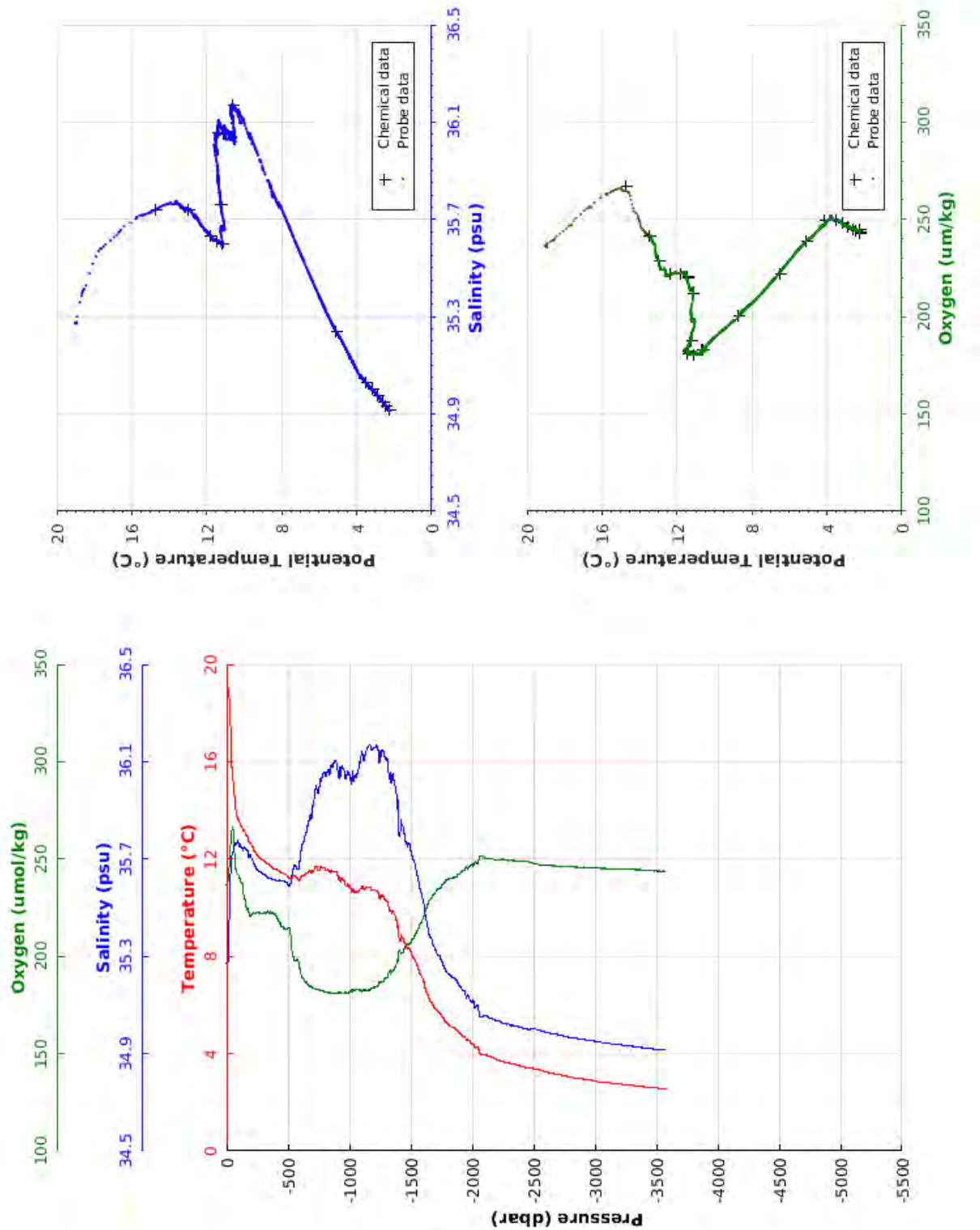


Station: 6



Cruise	: BOCATS 2016		
Station	: 7	Cast	: 1
Date	: 23/06/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 3541 m	Organism	: CSIC/IIM VIGO
Position	: N 40 20.04 W 010 2.04		

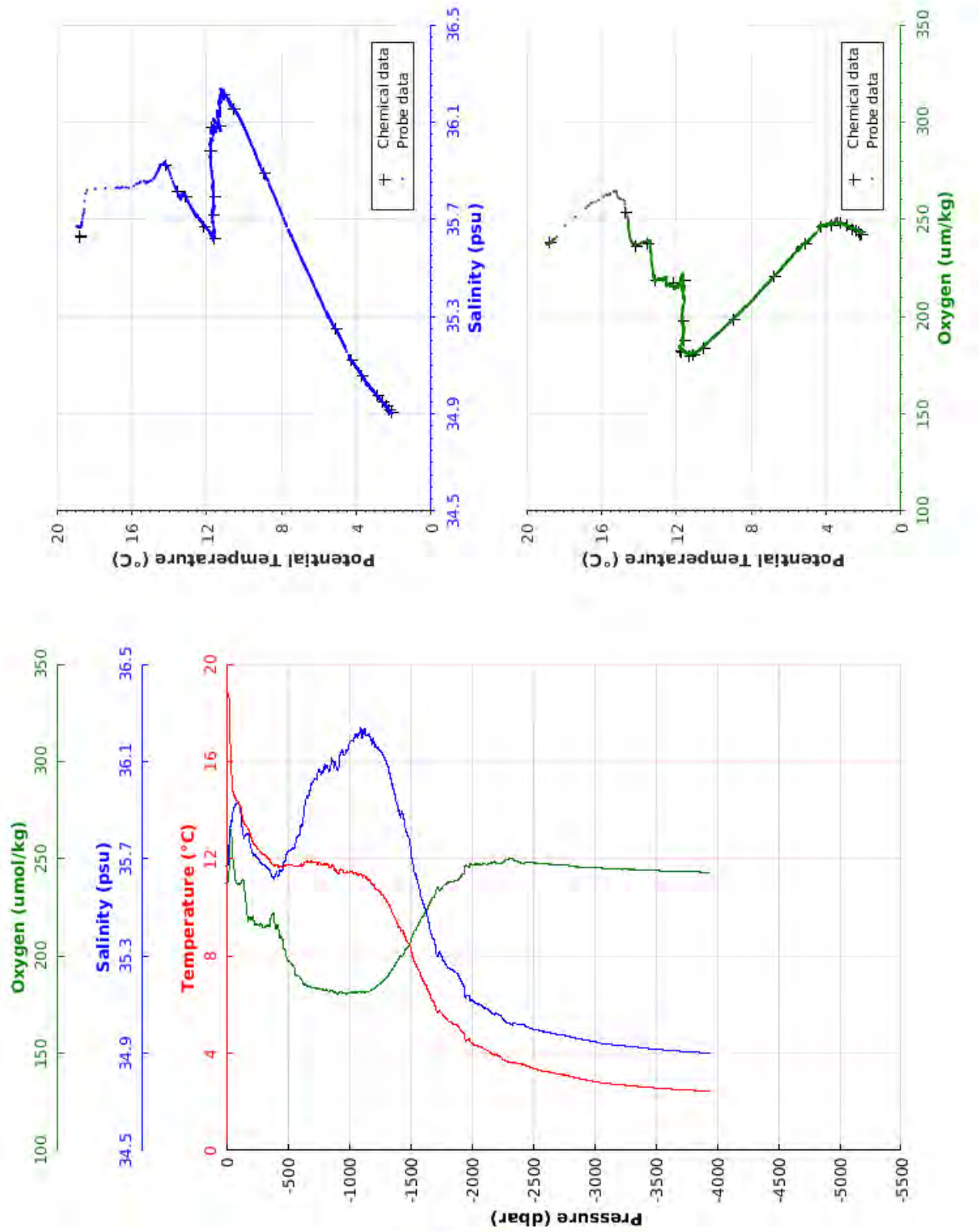
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.993	35.273	236.7	18.993	3050.0	2.843	34.947	245.1	2.590
10.0	18.984	35.273	236.3	18.983	3100.0	2.809	34.943	245.1	2.552
20.0	18.636	35.400	239.3	18.632	3150.0	2.778	34.940	245.0	2.516
30.0	17.614	35.581	247.4	17.609	3200.0	2.750	34.937	244.7	2.484
40.0	16.080	35.687	261.2	16.073	3250.0	2.720	34.933	244.7	2.449
50.0	15.413	35.717	264.8	15.406	3300.0	2.697	34.931	244.7	2.422
100.0	13.549	35.765	241.8	13.535	3350.0	2.661	34.927	244.5	2.381
150.0	13.083	35.744	230.4	13.062	3400.0	2.634	34.924	244.3	2.349
200.0	12.609	35.714	220.9	12.582	3450.0	2.607	34.921	244.0	2.317
250.0	12.159	35.660	222.5	12.126	3500.0	2.586	34.918	243.9	2.291
300.0	11.931	35.640	222.2	11.892	3550.0	2.571	34.916	243.7	2.271
350.0	11.727	35.619	222.9	11.681	3586.0	2.570	34.916	243.7	2.266
400.0	11.566	35.613	221.7	11.515					
450.0	11.439	35.610	215.8	11.381					
500.0	11.280	35.598	214.2	11.216					
550.0	11.314	35.662	199.3	11.244					
600.0	11.189	35.695	194.2	11.112					
650.0	11.401	35.809	186.9	11.317					
700.0	11.514	35.899	184.0	11.422					
750.0	11.539	35.975	182.8	11.440					
800.0	11.626	36.055	181.8	11.520					
850.0	11.538	36.080	181.3	11.426					
900.0	11.401	36.089	180.9	11.282					
950.0	11.131	36.075	180.8	11.008					
1000.0	10.877	36.051	181.0	10.748					
1050.0	10.669	36.046	182.7	10.535					
1100.0	10.873	36.131	182.0	10.731					
1150.0	10.831	36.157	182.6	10.682					
1200.0	10.705	36.155	184.0	10.551					
1250.0	10.422	36.119	186.8	10.264					
1300.0	10.259	36.112	188.6	10.096					
1350.0	9.808	36.033	192.5	9.643					
1400.0	9.209	35.922	197.1	9.042					
1450.0	8.590	35.802	203.4	8.424					
1500.0	8.184	35.744	206.6	8.016					
1550.0	7.608	35.638	212.4	7.440					
1600.0	7.033	35.535	218.9	6.867					
1650.0	6.232	35.395	228.0	6.069					
1700.0	5.852	35.330	232.6	5.690					
1750.0	5.585	35.287	235.5	5.420					
1800.0	5.219	35.231	239.4	5.054					
1850.0	5.062	35.213	240.4	4.894					
1900.0	4.824	35.179	242.4	4.655					
1950.0	4.552	35.134	245.3	4.381					
2000.0	4.373	35.111	247.3	4.200					
2050.0	4.210	35.087	248.2	4.034					
2100.0	3.968	35.055	250.6	3.791					
2150.0	3.880	35.047	250.2	3.699					
2200.0	3.757	35.037	249.6	3.574					
2250.0	3.677	35.026	249.9	3.490					
2300.0	3.606	35.020	249.3	3.414					
2350.0	3.555	35.016	249.1	3.360					
2400.0	3.471	35.007	248.8	3.272					
2450.0	3.409	35.000	248.6	3.206					
2500.0	3.384	35.002	247.4	3.177					
2550.0	3.328	34.997	246.9	3.117					
2600.0	3.250	34.989	247.0	3.035					
2650.0	3.185	34.983	246.7	2.967					
2700.0	3.144	34.978	246.2	2.921					
2750.0	3.083	34.972	246.4	2.856					
2800.0	3.030	34.966	246.0	2.799					
2850.0	2.998	34.963	245.8	2.763					
2900.0	2.959	34.959	245.6	2.719					
2950.0	2.917	34.954	245.6	2.673					
3000.0	2.879	34.950	245.5	2.630					



Station: 7

Cruise	: BOCATS 2016			
Station	: 8	Cast	: 1	
Date	: 23/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3901 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.05 W 010 18.01			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.921	35.671	237.5	18.920	3050.0	2.787	34.941	245.3	2.535
10.0	18.818	35.670	237.3	18.816	3100.0	2.758	34.938	245.0	2.502
20.0	18.629	35.703	239.0	18.626	3150.0	2.730	34.935	245.1	2.469
30.0	16.851	35.830	255.7	16.846	3200.0	2.701	34.932	244.6	2.436
40.0	15.604	35.850	262.5	15.597	3250.0	2.689	34.931	244.6	2.419
50.0	14.994	35.859	260.7	14.987	3300.0	2.672	34.928	244.5	2.397
100.0	14.260	35.931	237.3	14.246	3350.0	2.643	34.925	244.4	2.364
150.0	13.433	35.794	235.9	13.412	3400.0	2.614	34.922	244.2	2.330
200.0	12.874	35.752	219.6	12.847	3450.0	2.586	34.919	244.1	2.297
250.0	12.438	35.703	216.3	12.404	3500.0	2.574	34.917	244.0	2.280
300.0	12.177	35.678	214.6	12.137	3550.0	2.549	34.914	243.6	2.249
350.0	11.966	35.655	215.9	11.920	3600.0	2.536	34.913	243.7	2.232
400.0	11.719	35.633	216.6	11.667	3650.0	2.519	34.910	243.6	2.210
450.0	11.638	35.645	210.2	11.579	3700.0	2.504	34.908	243.5	2.190
500.0	11.754	35.726	198.4	11.688	3750.0	2.491	34.907	243.5	2.171
550.0	11.683	35.741	195.3	11.611	3800.0	2.480	34.905	243.3	2.155
600.0	11.706	35.799	189.7	11.627	3850.0	2.471	34.904	243.3	2.140
650.0	11.876	35.940	185.1	11.789	3900.0	2.469	34.903	242.9	2.133
700.0	11.874	36.004	183.9	11.780	3950.0	2.467	34.902	243.0	2.125
750.0	11.866	36.060	183.3	11.766	3954.0	2.467	34.902	243.1	2.125
800.0	11.798	36.080	182.9	11.691					
850.0	11.644	36.071	181.8	11.531					
900.0	11.447	36.075	180.8	11.328					
950.0	11.533	36.144	181.1	11.406					
1000.0	11.438	36.163	181.1	11.306					
1050.0	11.430	36.200	181.4	11.291					
1100.0	11.373	36.231	181.4	11.227					
1150.0	11.148	36.209	181.5	10.998					
1200.0	10.923	36.182	183.2	10.768					
1250.0	10.618	36.145	185.4	10.458					
1300.0	10.317	36.104	188.3	10.153					
1350.0	9.820	36.015	192.3	9.654					
1400.0	9.186	35.899	198.0	9.020					
1450.0	8.909	35.862	200.8	8.739					
1500.0	8.384	35.765	205.6	8.214					
1550.0	7.590	35.623	213.9	7.423					
1600.0	7.029	35.526	219.8	6.863					
1650.0	6.490	35.438	225.5	6.324					
1700.0	5.973	35.351	231.1	5.808					
1750.0	5.661	35.303	234.3	5.495					
1800.0	5.368	35.259	237.4	5.201					
1850.0	5.212	35.240	238.4	5.042					
1900.0	5.044	35.216	239.7	4.871					
1950.0	4.551	35.129	246.1	4.380					
2000.0	4.431	35.119	246.9	4.257					
2050.0	4.303	35.103	247.0	4.126					
2100.0	4.159	35.087	247.4	3.979					
2150.0	4.034	35.074	247.4	3.851					
2200.0	3.944	35.064	247.8	3.757					
2250.0	3.783	35.044	247.9	3.593					
2300.0	3.643	35.023	249.8	3.451					
2350.0	3.621	35.024	249.0	3.425					
2400.0	3.557	35.020	248.0	3.356					
2450.0	3.471	35.009	248.2	3.267					
2500.0	3.381	34.999	248.1	3.174					
2550.0	3.313	34.994	247.6	3.102					
2600.0	3.249	34.988	247.3	3.034					
2650.0	3.198	34.983	247.0	2.979					
2700.0	3.149	34.977	246.8	2.926					
2750.0	3.119	34.974	246.8	2.892					
2800.0	3.055	34.968	246.4	2.824					
2850.0	2.987	34.962	245.9	2.752					
2900.0	2.933	34.957	245.7	2.694					
2950.0	2.888	34.952	245.5	2.645					
3000.0	2.845	34.948	245.5	2.597					

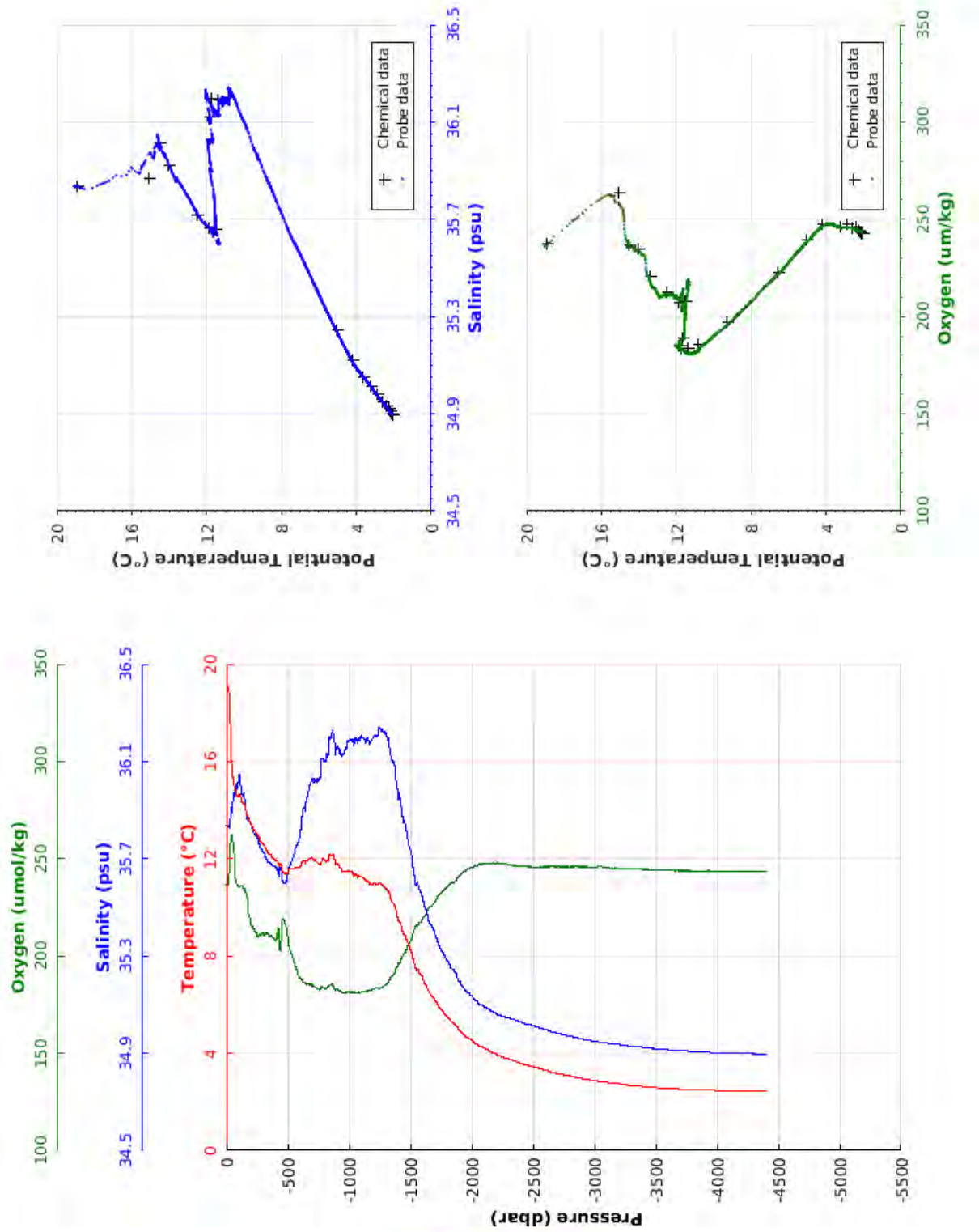


Station: 8

Cruise	: BOCATS 2016			
Station	: 9	Cast	: 1	
Date	: 24/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4338 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.04 W 010 34.32			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	19.038	35.836	236.6	19.038	3050.0	2.824	34.944	245.9	2.572
10.0	19.035	35.836	236.4	19.033	3100.0	2.799	34.942	245.3	2.542
20.0	18.867	35.837	237.0	18.863	3150.0	2.764	34.938	245.1	2.503
30.0	17.703	35.844	247.7	17.698	3200.0	2.744	34.936	245.0	2.478
40.0	16.139	35.898	259.8	16.133	3250.0	2.700	34.932	244.8	2.430
50.0	15.484	35.919	262.3	15.476	3300.0	2.677	34.929	244.8	2.402
100.0	14.561	36.013	236.5	14.546	3350.0	2.655	34.926	244.6	2.375
150.0	14.211	35.960	233.7	14.189	3400.0	2.630	34.924	244.4	2.345
200.0	13.450	35.846	218.7	13.421	3450.0	2.606	34.921	244.4	2.317
250.0	13.029	35.792	212.0	12.994	3500.0	2.588	34.918	244.3	2.293
300.0	12.574	35.727	211.6	12.533	3550.0	2.567	34.916	244.1	2.268
350.0	12.202	35.687	210.9	12.155	3600.0	2.551	34.914	243.9	2.247
400.0	11.924	35.666	208.3	11.871	3650.0	2.538	34.912	243.9	2.229
450.0	11.712	35.654	205.1	11.654	3700.0	2.525	34.911	243.8	2.210
500.0	11.430	35.615	214.2	11.366	3750.0	2.514	34.909	243.8	2.193
550.0	11.610	35.715	198.6	11.538	3800.0	2.498	34.907	243.7	2.173
600.0	11.681	35.787	188.4	11.602	3850.0	2.489	34.906	243.6	2.158
650.0	11.892	35.929	185.6	11.805	3900.0	2.482	34.904	243.7	2.146
700.0	12.027	36.024	185.2	11.933	3950.0	2.476	34.903	243.7	2.134
750.0	11.794	36.022	182.9	11.694	4000.0	2.471	34.902	243.6	2.124
800.0	11.915	36.099	183.6	11.807	4050.0	2.468	34.901	243.6	2.115
850.0	12.104	36.193	185.1	11.988	4100.0	2.463	34.900	243.6	2.104
900.0	11.782	36.148	182.7	11.661	4150.0	2.462	34.899	243.6	2.097
950.0	11.471	36.124	181.2	11.345	4200.0	2.462	34.899	243.5	2.092
1000.0	11.484	36.183	181.5	11.351	4250.0	2.464	34.898	243.5	2.088
1050.0	11.373	36.195	181.2	11.234	4300.0	2.464	34.898	243.6	2.082
1100.0	11.274	36.205	181.2	11.129	4350.0	2.464	34.897	243.4	2.076
1150.0	11.103	36.194	181.9	10.952	4400.0	2.469	34.897	243.3	2.074
1200.0	10.974	36.202	183.0	10.818	4406.0	2.470	34.897	243.4	2.075
1250.0	10.997	36.237	183.1	10.833					
1300.0	10.796	36.215	185.0	10.628					
1350.0	10.228	36.108	189.5	10.058					
1400.0	9.563	35.977	194.5	9.393					
1450.0	8.846	35.849	201.4	8.678					
1500.0	8.244	35.739	207.2	8.076					
1550.0	7.417	35.590	215.6	7.251					
1600.0	7.081	35.542	218.5	6.914					
1650.0	6.513	35.449	223.8	6.348					
1700.0	6.170	35.392	227.5	6.003					
1750.0	5.792	35.329	232.3	5.625					
1800.0	5.491	35.282	235.4	5.322					
1850.0	5.264	35.247	237.9	5.093					
1900.0	4.931	35.195	241.2	4.759					
1950.0	4.706	35.160	243.7	4.532					
2000.0	4.537	35.136	245.3	4.361					
2050.0	4.350	35.111	246.6	4.172					
2100.0	4.228	35.095	247.3	4.047					
2150.0	4.072	35.077	247.6	3.888					
2200.0	3.955	35.064	247.7	3.768					
2250.0	3.840	35.052	247.6	3.650					
2300.0	3.770	35.047	246.9	3.576					
2350.0	3.690	35.039	246.4	3.493					
2400.0	3.586	35.029	246.1	3.385					
2450.0	3.509	35.020	246.1	3.305					
2500.0	3.450	35.014	245.7	3.242					
2550.0	3.373	35.005	245.7	3.161					
2600.0	3.308	34.998	245.9	3.092					
2650.0	3.223	34.988	245.9	3.003					
2700.0	3.163	34.982	245.8	2.940					
2750.0	3.126	34.978	245.8	2.898					
2800.0	3.067	34.971	245.8	2.835					
2850.0	3.003	34.964	245.9	2.767					
2900.0	2.951	34.958	245.8	2.712					
2950.0	2.910	34.954	245.7	2.667					
3000.0	2.870	34.949	245.7	2.622					

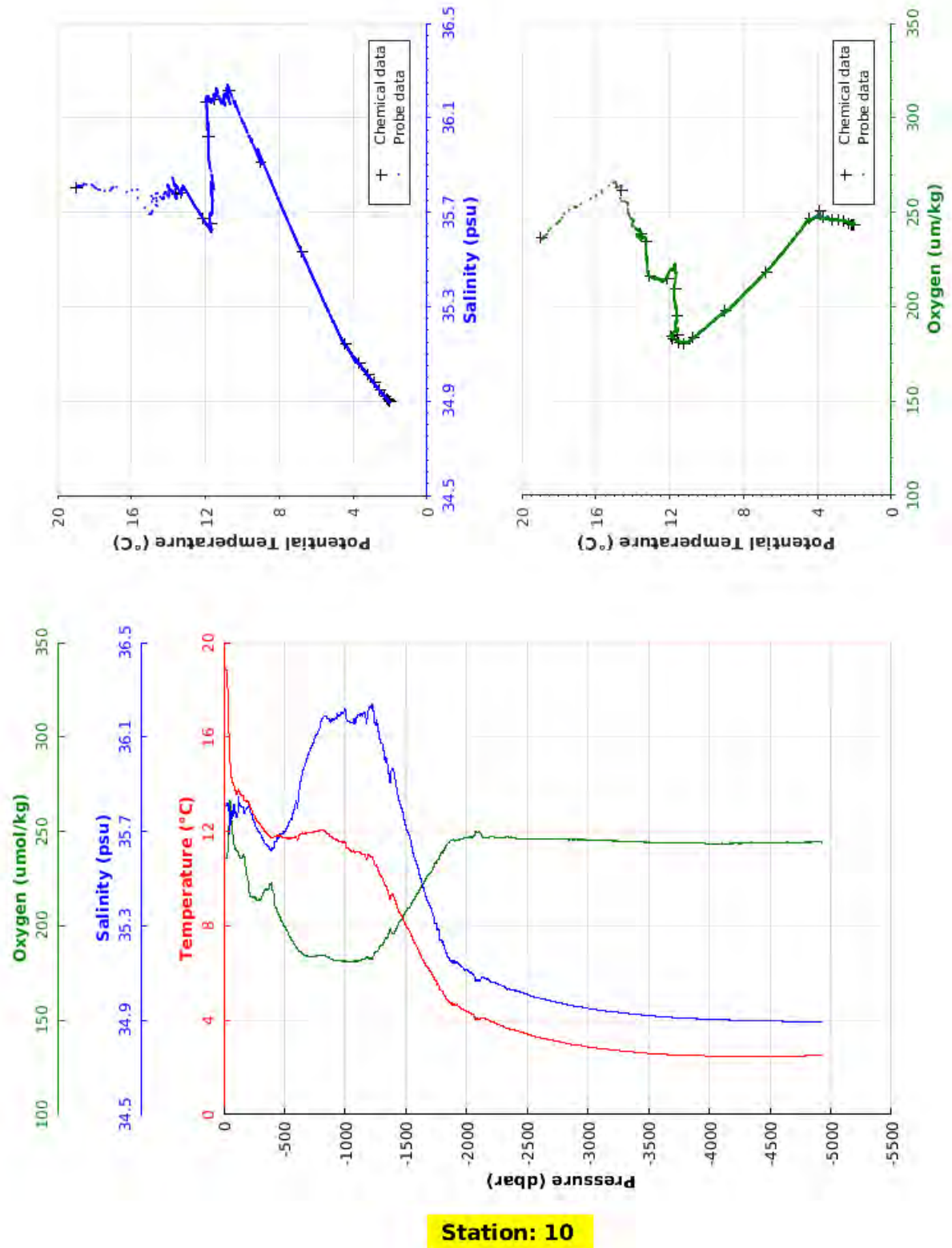




Station: 9

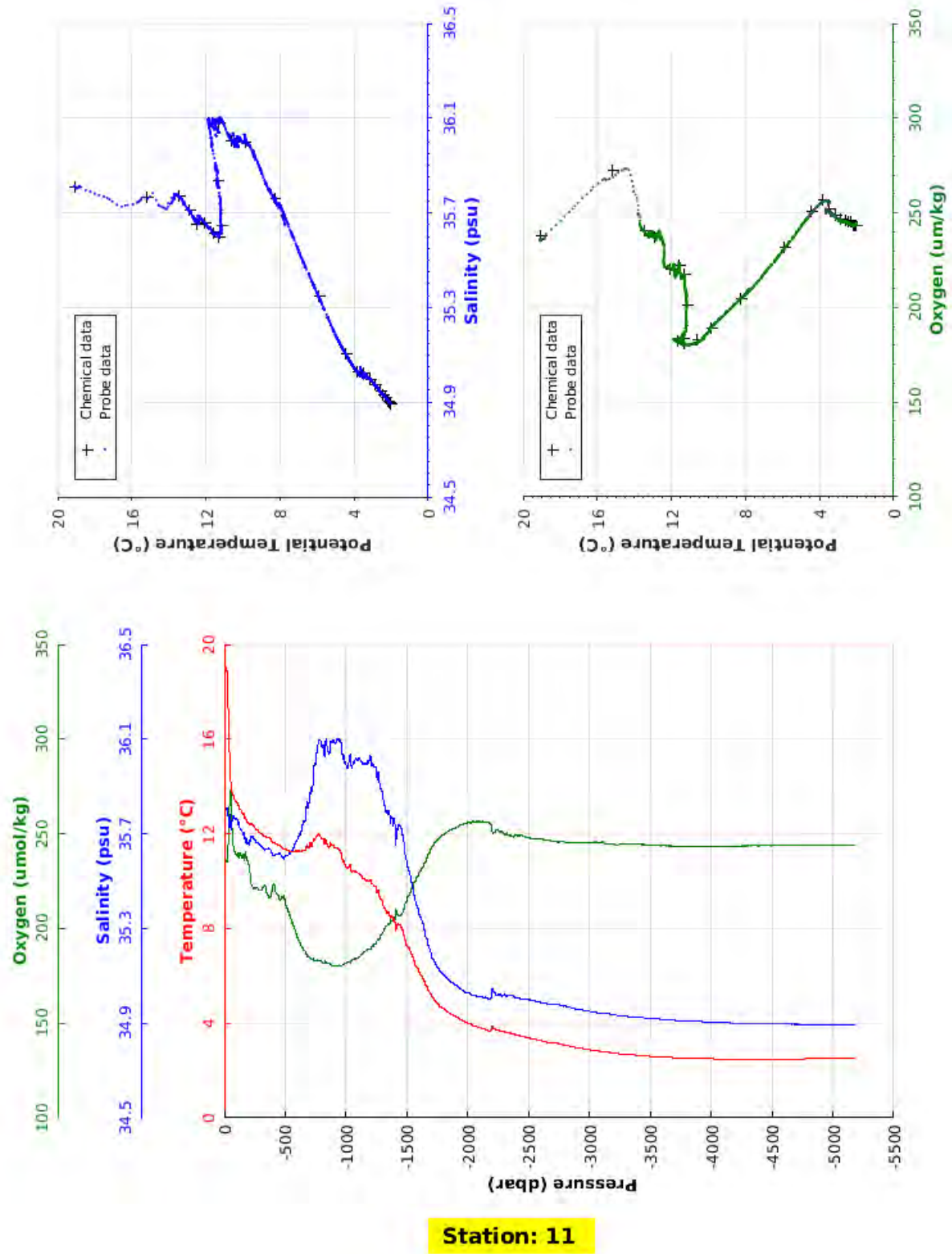
Cruise	: BOCATS 2016			
Station	: 10	Cast	: 1	
Date	: 24/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4851 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.04			
	W 010 54.35			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.913	35.807	236.1	18.913	3050.0	2.838	34.946	245.4	2.585
10.0	18.913	35.808	235.8	18.911	3100.0	2.805	34.943	245.2	2.548
20.0	18.868	35.810	236.3	18.864	3150.0	2.770	34.939	245.2	2.509
30.0	18.165	35.817	243.6	18.160	3200.0	2.747	34.936	245.0	2.481
40.0	17.006	35.805	252.9	16.999	3250.0	2.721	34.933	244.9	2.450
50.0	14.869	35.705	264.2	14.861	3300.0	2.689	34.930	244.8	2.413
100.0	13.646	35.769	240.0	13.632	3350.0	2.671	34.928	244.6	2.391
150.0	13.510	35.803	237.2	13.489	3400.0	2.644	34.925	244.6	2.358
200.0	13.255	35.804	222.3	13.227	3450.0	2.618	34.922	244.4	2.328
250.0	12.693	35.738	215.1	12.659	3500.0	2.595	34.919	244.3	2.300
300.0	12.299	35.691	213.7	12.259	3550.0	2.580	34.917	244.1	2.280
350.0	11.952	35.646	219.4	11.906	3600.0	2.558	34.915	244.0	2.253
400.0	11.747	35.627	218.4	11.694	3650.0	2.549	34.913	244.0	2.239
450.0	11.807	35.672	206.3	11.747	3700.0	2.536	34.912	243.9	2.220
500.0	11.720	35.699	199.1	11.655	3750.0	2.529	34.910	243.8	2.208
550.0	11.709	35.754	193.2	11.637	3800.0	2.521	34.909	243.8	2.194
600.0	11.719	35.817	188.3	11.640	3850.0	2.509	34.907	243.9	2.178
650.0	11.923	35.958	185.0	11.836	3900.0	2.504	34.906	243.8	2.167
700.0	11.943	36.036	183.6	11.850	3950.0	2.496	34.905	243.8	2.154
750.0	12.000	36.102	184.0	11.898	4000.0	2.490	34.904	243.4	2.142
800.0	12.050	36.170	184.4	11.942	4050.0	2.486	34.903	243.2	2.133
850.0	11.908	36.180	183.3	11.793	4100.0	2.482	34.902	243.7	2.122
900.0	11.705	36.172	181.9	11.585	4150.0	2.480	34.901	243.6	2.115
950.0	11.589	36.192	181.5	11.463	4200.0	2.476	34.900	243.7	2.105
1000.0	11.509	36.217	181.1	11.376	4250.0	2.474	34.899	243.7	2.098
1050.0	11.135	36.160	181.1	10.998	4300.0	2.472	34.899	244.0	2.089
1100.0	11.145	36.194	181.4	11.001	4350.0	2.473	34.898	244.2	2.084
1150.0	11.026	36.198	182.4	10.876	4400.0	2.473	34.898	244.3	2.079
1200.0	10.972	36.228	182.4	10.816	4450.0	2.473	34.897	244.1	2.072
1250.0	10.519	36.150	186.6	10.360	4500.0	2.474	34.897	243.9	2.068
1300.0	10.100	36.077	189.8	9.938	4550.0	2.476	34.896	244.1	2.064
1350.0	9.472	35.967	195.2	9.309	4600.0	2.479	34.896	244.1	2.060
1400.0	9.249	35.949	196.2	9.082	4650.0	2.482	34.895	244.2	2.057
1450.0	8.553	35.818	202.5	8.387	4700.0	2.485	34.895	244.1	2.054
1500.0	7.995	35.714	208.2	7.829	4750.0	2.490	34.895	244.1	2.052
1550.0	7.526	35.631	212.4	7.360	4800.0	2.495	34.895	244.3	2.051
1600.0	7.015	35.541	217.7	6.849	4850.0	2.497	34.894	244.5	2.046
1650.0	6.495	35.450	223.4	6.330	4900.0	2.501	34.894	244.4	2.044
1700.0	6.060	35.375	228.4	5.895	4933.0	2.504	34.894	244.5	2.043
1750.0	5.645	35.303	233.6	5.479					
1800.0	5.242	35.239	238.5	5.076					
1850.0	4.811	35.164	244.3	4.646					
1900.0	4.687	35.150	245.0	4.519					
1950.0	4.519	35.130	246.0	4.348					
2000.0	4.389	35.114	246.4	4.216					
2050.0	4.261	35.096	247.3	4.084					
2100.0	4.060	35.068	249.7	3.881					
2150.0	4.070	35.079	247.0	3.886					
2200.0	3.943	35.063	247.2	3.756					
2250.0	3.848	35.055	246.8	3.657					
2300.0	3.739	35.043	246.7	3.545					
2350.0	3.657	35.034	246.7	3.460					
2400.0	3.566	35.024	246.5	3.365					
2450.0	3.496	35.018	246.1	3.292					
2500.0	3.423	35.010	245.9	3.215					
2550.0	3.335	35.000	246.1	3.124					
2600.0	3.274	34.994	246.1	3.059					
2650.0	3.211	34.987	246.0	2.992					
2700.0	3.158	34.981	245.9	2.935					
2750.0	3.108	34.976	245.8	2.880					
2800.0	3.050	34.969	245.7	2.818					
2850.0	2.996	34.963	245.7	2.761					
2900.0	2.962	34.960	245.7	2.723					
2950.0	2.924	34.956	245.7	2.680					
3000.0	2.872	34.950	245.5	2.624					



Cruise	: BOCATS 2016			
Station	: 11	Cast	: 1	
Date	: 24/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5096 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.04			
	W 011 20.34			

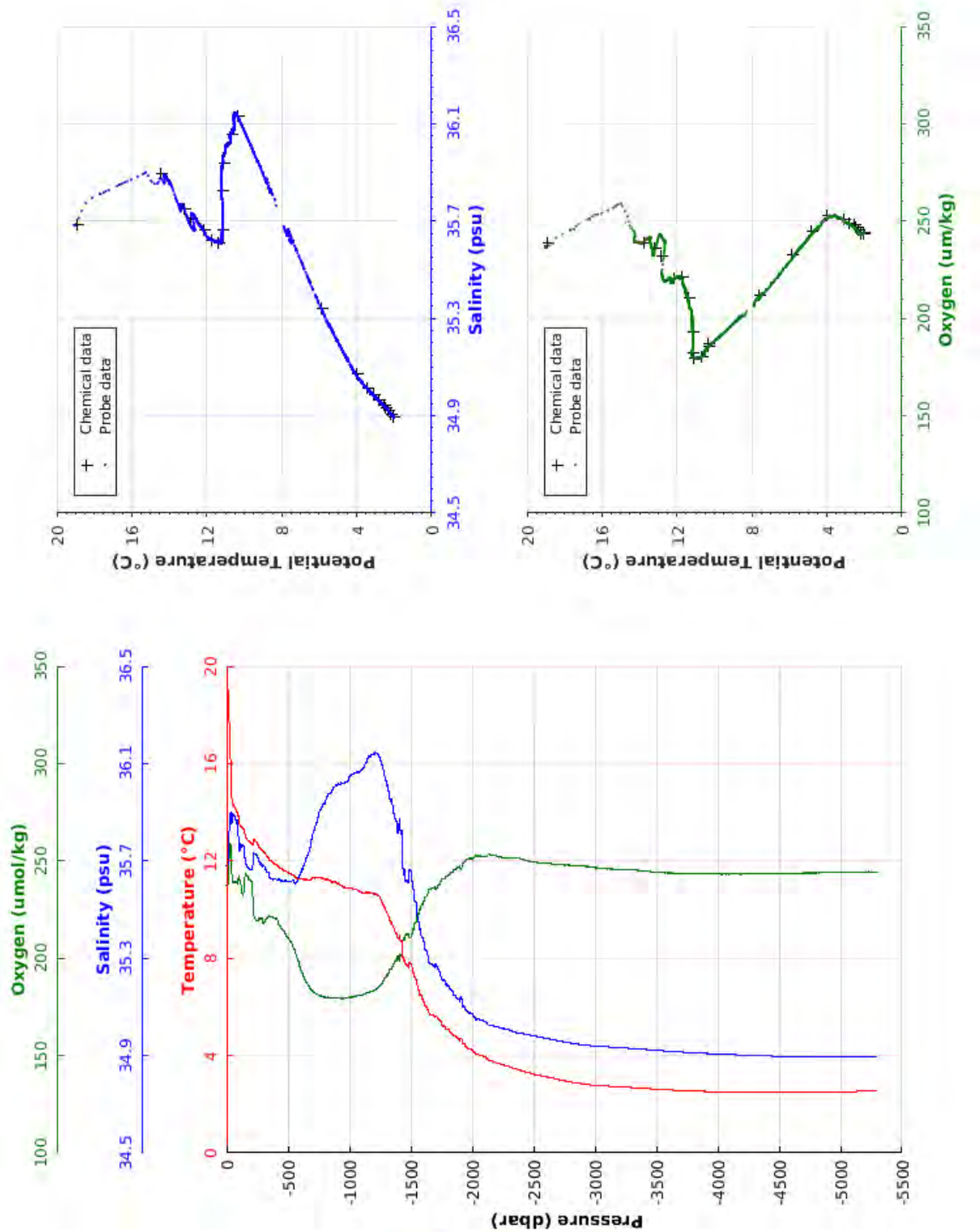
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	19.080	35.810	235.8	19.080	3050.0	2.831	34.945	245.7	2.578
10.0	19.072	35.810	235.9	19.070	3100.0	2.804	34.942	245.8	2.547
20.0	18.958	35.803	236.0	18.954	3150.0	2.777	34.940	244.6	2.515
30.0	17.509	35.768	250.4	17.504	3200.0	2.748	34.936	244.3	2.482
40.0	15.628	35.747	268.0	15.622	3250.0	2.705	34.932	244.6	2.434
50.0	14.415	35.727	273.4	14.408	3300.0	2.680	34.929	244.7	2.404
100.0	13.347	35.760	238.5	13.333	3350.0	2.663	34.927	244.5	2.383
150.0	12.881	35.702	238.1	12.860	3400.0	2.647	34.925	244.5	2.362
200.0	12.441	35.657	233.4	12.414	3450.0	2.624	34.923	244.2	2.334
250.0	12.268	35.673	221.3	12.235	3500.0	2.601	34.920	243.9	2.306
300.0	12.019	35.649	220.2	11.979	3550.0	2.589	34.918	243.8	2.289
350.0	11.851	35.637	217.9	11.805	3600.0	2.571	34.916	243.8	2.266
400.0	11.643	35.610	223.2	11.591	3650.0	2.556	34.914	243.6	2.246
450.0	11.535	35.618	215.5	11.477	3700.0	2.541	34.912	243.4	2.226
500.0	11.347	35.605	212.6	11.283	3750.0	2.531	34.911	243.4	2.211
550.0	11.269	35.628	203.3	11.198	3800.0	2.525	34.910	243.3	2.198
600.0	11.286	35.681	194.6	11.209	3850.0	2.518	34.908	243.3	2.186
650.0	11.314	35.752	188.5	11.230	3900.0	2.510	34.907	243.4	2.173
700.0	11.469	35.845	184.7	11.377	3950.0	2.502	34.906	243.5	2.160
750.0	11.822	36.015	183.0	11.721	4000.0	2.494	34.905	243.5	2.146
800.0	11.787	36.067	182.2	11.680	4050.0	2.487	34.903	243.5	2.133
850.0	11.480	36.048	181.8	11.368	4100.0	2.482	34.902	243.5	2.122
900.0	11.483	36.092	180.3	11.364	4150.0	2.478	34.901	243.5	2.113
950.0	11.271	36.093	180.5	11.147	4200.0	2.474	34.900	243.6	2.104
1000.0	10.612	35.990	182.0	10.485	4250.0	2.473	34.900	243.5	2.096
1050.0	10.396	35.982	183.8	10.265	4300.0	2.470	34.899	243.7	2.088
1100.0	10.345	36.017	185.0	10.207	4350.0	2.471	34.898	243.7	2.082
1150.0	10.092	35.996	187.8	9.949	4400.0	2.473	34.898	243.7	2.079
1200.0	10.055	36.028	189.0	9.907	4450.0	2.474	34.897	243.7	2.074
1250.0	9.580	35.943	193.3	9.429	4500.0	2.476	34.897	243.8	2.069
1300.0	9.133	35.867	197.9	8.980	4550.0	2.477	34.896	243.8	2.065
1350.0	8.695	35.796	202.1	8.540	4600.0	2.480	34.896	243.8	2.062
1400.0	8.298	35.737	204.9	8.141	4650.0	2.484	34.896	243.8	2.059
1450.0	8.112	35.725	207.1	7.951	4700.0	2.488	34.896	243.8	2.057
1500.0	7.265	35.561	216.5	7.108	4750.0	2.492	34.895	243.9	2.054
1550.0	6.778	35.470	222.1	6.620	4800.0	2.495	34.895	243.9	2.051
1600.0	6.151	35.360	229.8	5.995	4850.0	2.499	34.895	244.1	2.049
1650.0	5.779	35.292	234.6	5.623	4900.0	2.504	34.895	244.1	2.047
1700.0	5.134	35.179	243.1	4.981	4950.0	2.509	34.894	244.0	2.046
1750.0	4.839	35.135	247.0	4.685	5000.0	2.515	34.894	244.0	2.045
1800.0	4.611	35.104	249.7	4.454	5050.0	2.521	34.894	244.0	2.044
1850.0	4.416	35.076	252.0	4.257	5100.0	2.527	34.894	244.1	2.044
1900.0	4.303	35.061	253.3	4.140	5150.0	2.533	34.894	244.1	2.044
1950.0	4.137	35.041	254.8	3.972	5185.0	2.538	34.894	244.3	2.043
2000.0	4.010	35.030	255.9	3.842					
2050.0	3.894	35.018	256.4	3.723					
2100.0	3.811	35.012	256.5	3.637					
2150.0	3.732	35.006	256.1	3.554					
2200.0	3.867	35.046	251.1	3.681					
2250.0	3.698	35.020	251.4	3.510					
2300.0	3.660	35.023	249.8	3.468					
2350.0	3.571	35.015	249.0	3.375					
2400.0	3.503	35.009	249.3	3.304					
2450.0	3.429	35.001	249.1	3.226					
2500.0	3.382	34.999	247.8	3.175					
2550.0	3.318	34.994	247.3	3.107					
2600.0	3.257	34.988	247.2	3.043					
2650.0	3.201	34.982	246.8	2.982					
2700.0	3.166	34.980	246.1	2.942					
2750.0	3.138	34.978	245.6	2.910					
2800.0	3.079	34.972	245.6	2.847					
2850.0	3.020	34.966	245.3	2.785					
2900.0	2.965	34.959	245.4	2.725					
2950.0	2.920	34.954	245.5	2.676					
3000.0	2.877	34.950	245.3	2.629					





Cruise	: BOCATS 2016			
Station	: 12	Cast	: 1	
Date	: 24/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5215 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.03 W 011 46.46			

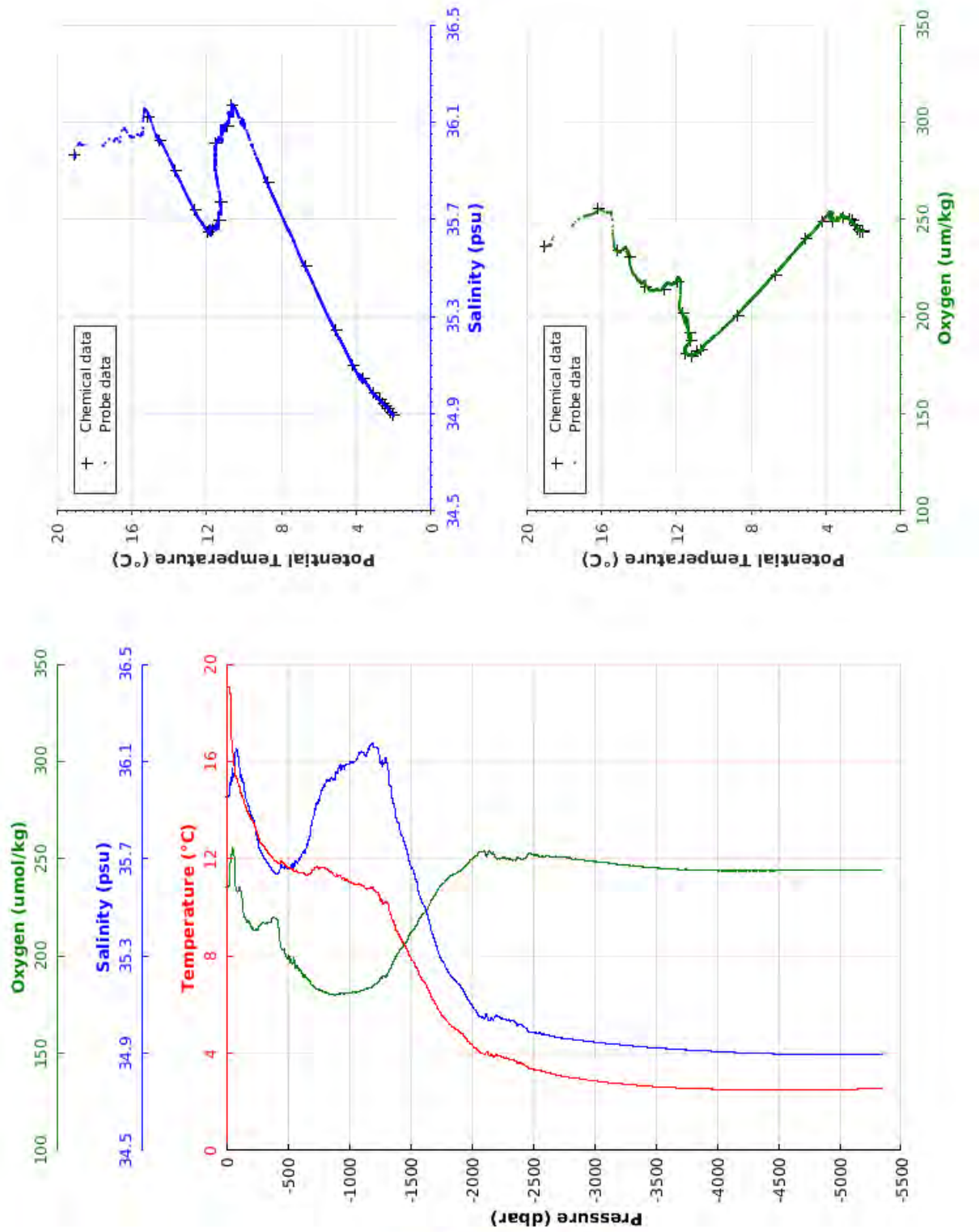
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	19.025	35.682	237.1	19.025	3050.0	2.754	34.937	246.2	2.503
10.0	19.027	35.682	236.8	19.025	3100.0	2.744	34.936	245.9	2.489
20.0	18.120	35.795	243.3	18.116	3150.0	2.735	34.935	245.8	2.475
30.0	16.374	35.859	253.4	16.369	3200.0	2.721	34.933	245.7	2.455
40.0	14.801	35.854	255.1	14.795	3250.0	2.707	34.931	245.6	2.436
50.0	14.262	35.870	241.9	14.255	3300.0	2.686	34.929	245.4	2.410
100.0	13.663	35.794	240.8	13.649	3350.0	2.670	34.927	245.2	2.390
150.0	13.097	35.723	238.7	13.076	3400.0	2.655	34.925	244.8	2.370
200.0	12.703	35.664	239.9	12.676	3450.0	2.633	34.923	244.6	2.343
250.0	12.713	35.723	219.3	12.679	3500.0	2.613	34.921	244.2	2.317
300.0	12.377	35.684	218.2	12.337	3550.0	2.604	34.920	243.9	2.303
350.0	12.049	35.636	221.5	12.003	3600.0	2.589	34.918	243.8	2.283
400.0	11.865	35.627	220.5	11.812	3650.0	2.577	34.916	243.7	2.266
450.0	11.659	35.618	215.7	11.600	3700.0	2.565	34.915	243.5	2.249
500.0	11.521	35.616	211.2	11.456	3750.0	2.554	34.913	243.5	2.233
550.0	11.389	35.616	205.2	11.318	3800.0	2.543	34.912	243.4	2.216
600.0	11.247	35.643	196.1	11.170	3850.0	2.534	34.910	243.3	2.202
650.0	11.243	35.709	188.5	11.159	3900.0	2.527	34.909	243.3	2.189
700.0	11.293	35.800	183.2	11.202	3950.0	2.523	34.908	243.3	2.180
750.0	11.324	35.886	181.4	11.226	4000.0	2.512	34.907	243.3	2.164
800.0	11.259	35.936	180.0	11.156	4050.0	2.506	34.905	243.2	2.152
850.0	11.169	35.981	179.7	11.059	4100.0	2.500	34.904	243.2	2.140
900.0	11.061	36.008	179.5	10.945	4150.0	2.496	34.903	243.2	2.130
950.0	10.955	36.019	179.3	10.833	4200.0	2.493	34.902	243.2	2.122
1000.0	10.900	36.046	180.0	10.772	4250.0	2.486	34.901	243.3	2.109
1050.0	10.839	36.064	180.4	10.705	4300.0	2.481	34.900	243.4	2.099
1100.0	10.706	36.072	181.1	10.566	4350.0	2.478	34.899	243.5	2.089
1150.0	10.728	36.121	182.1	10.580	4400.0	2.478	34.898	243.5	2.083
1200.0	10.647	36.139	183.4	10.493	4450.0	2.477	34.898	243.5	2.076
1250.0	10.476	36.125	185.5	10.317	4500.0	2.477	34.897	243.6	2.070
1300.0	9.915	36.027	190.3	9.755	4550.0	2.478	34.897	243.7	2.065
1350.0	9.377	35.934	195.1	9.215	4600.0	2.480	34.896	243.7	2.061
1400.0	8.804	35.826	200.9	8.642	4650.0	2.483	34.896	243.7	2.058
1450.0	7.955	35.663	209.7	7.795	4700.0	2.487	34.896	243.8	2.056
1500.0	7.791	35.658	210.3	7.628	4750.0	2.490	34.895	243.7	2.053
1550.0	6.968	35.506	219.0	6.808	4800.0	2.494	34.895	243.9	2.050
1600.0	6.307	35.386	227.6	6.150	4850.0	2.499	34.895	243.8	2.048
1650.0	5.707	35.282	234.8	5.551	4900.0	2.503	34.895	244.0	2.047
1700.0	5.608	35.269	236.5	5.448	4950.0	2.508	34.895	244.1	2.045
1750.0	5.291	35.220	239.4	5.131	5000.0	2.513	34.894	244.1	2.043
1800.0	5.064	35.188	242.3	4.901	5050.0	2.518	34.894	244.2	2.041
1850.0	4.825	35.153	245.0	4.660	5100.0	2.523	34.894	244.2	2.040
1900.0	4.622	35.125	247.3	4.455	5150.0	2.529	34.894	244.2	2.039
1950.0	4.380	35.089	250.0	4.212	5200.0	2.535	34.894	244.4	2.039
2000.0	4.222	35.072	251.0	4.051	5250.0	2.542	34.894	244.3	2.039
2050.0	4.044	35.050	252.5	3.871	5300.0	2.549	34.894	244.3	2.039
2100.0	3.939	35.041	252.4	3.762	5307.0	2.550	34.894	244.5	2.039
2150.0	3.782	35.024	253.0	3.603					
2200.0	3.694	35.017	252.6	3.511					
2250.0	3.623	35.012	251.9	3.436					
2300.0	3.548	35.006	251.5	3.358					
2350.0	3.460	34.997	251.6	3.266					
2400.0	3.381	34.991	251.0	3.184					
2450.0	3.311	34.986	250.0	3.110					
2500.0	3.241	34.981	249.5	3.036					
2550.0	3.197	34.977	249.2	2.988					
2600.0	3.126	34.971	248.8	2.914					
2650.0	3.076	34.966	248.6	2.859					
2700.0	3.016	34.961	248.1	2.796					
2750.0	2.963	34.956	247.9	2.739					
2800.0	2.916	34.952	247.9	2.688					
2850.0	2.869	34.948	247.4	2.637					
2900.0	2.842	34.945	247.3	2.605					
2950.0	2.802	34.941	247.1	2.561					
3000.0	2.778	34.939	246.6	2.532					



Station: 12

Cruise	: BOCATS 2016			
Station	: 13	Cast	: 1	
Date	: 24/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5247 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 20.04 W 012 13.26			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	19.038	35.955	235.7	19.038	3050.0	2.836	34.943	248.4	2.583
10.0	19.045	35.955	235.6	19.043	3100.0	2.803	34.940	248.0	2.546
20.0	19.045	35.956	235.7	19.041	3150.0	2.782	34.938	247.4	2.520
30.0	18.824	36.010	236.6	18.818	3200.0	2.756	34.936	247.0	2.490
40.0	17.210	36.030	250.1	17.203	3250.0	2.733	34.934	246.6	2.462
50.0	16.440	36.069	252.9	16.432	3300.0	2.706	34.931	246.4	2.430
100.0	15.063	36.121	233.2	15.047	3350.0	2.684	34.929	246.2	2.403
150.0	14.201	35.980	221.1	14.179	3400.0	2.658	34.926	245.8	2.373
200.0	13.654	35.887	216.1	13.626	3450.0	2.642	34.924	245.5	2.351
250.0	13.066	35.795	213.7	13.031	3500.0	2.625	34.922	245.3	2.330
300.0	12.528	35.711	217.4	12.487	3550.0	2.613	34.921	245.1	2.312
350.0	12.198	35.673	217.1	12.151	3600.0	2.598	34.919	244.8	2.293
400.0	11.912	35.642	219.6	11.860	3650.0	2.584	34.917	244.7	2.273
450.0	11.887	35.672	205.0	11.828	3700.0	2.568	34.915	244.4	2.252
500.0	11.657	35.662	199.1	11.592	3750.0	2.562	34.914	244.4	2.241
550.0	11.562	35.678	197.3	11.491	3800.0	2.555	34.913	244.3	2.228
600.0	11.416	35.696	193.1	11.338	3850.0	2.547	34.911	244.1	2.215
650.0	11.294	35.729	190.1	11.210	3900.0	2.540	34.910	244.0	2.202
700.0	11.510	35.851	185.1	11.418	3950.0	2.528	34.909	244.0	2.185
750.0	11.657	35.944	182.8	11.558	4000.0	2.519	34.907	243.9	2.170
800.0	11.637	36.002	181.7	11.531	4050.0	2.512	34.906	243.8	2.157
850.0	11.436	36.023	180.5	11.324	4100.0	2.505	34.905	243.8	2.145
900.0	11.340	36.057	180.3	11.222	4150.0	2.495	34.903	243.9	2.130
950.0	11.224	36.086	180.8	11.100	4200.0	2.490	34.902	243.8	2.119
1000.0	11.051	36.089	181.0	10.921	4250.0	2.487	34.901	243.9	2.110
1050.0	10.932	36.099	181.5	10.796	4300.0	2.483	34.900	243.7	2.100
1100.0	10.933	36.141	182.0	10.791	4350.0	2.480	34.899	243.9	2.092
1150.0	10.764	36.136	183.4	10.616	4400.0	2.480	34.899	243.8	2.085
1200.0	10.739	36.164	184.5	10.585	4450.0	2.478	34.898	243.9	2.078
1250.0	10.441	36.121	187.0	10.282	4500.0	2.478	34.897	243.9	2.071
1300.0	10.259	36.114	188.9	10.096	4550.0	2.478	34.897	244.0	2.065
1350.0	9.563	35.970	194.7	9.400	4600.0	2.479	34.896	244.0	2.060
1400.0	8.942	35.851	200.9	8.778	4650.0	2.483	34.896	244.0	2.058
1450.0	8.482	35.772	205.4	8.317	4700.0	2.484	34.895	244.1	2.053
1500.0	7.938	35.678	211.0	7.773	4750.0	2.487	34.895	243.9	2.050
1550.0	7.527	35.613	215.3	7.360	4800.0	2.491	34.895	244.0	2.047
1600.0	6.987	35.517	221.1	6.821	4850.0	2.496	34.895	244.2	2.046
1650.0	6.575	35.452	225.4	6.409	4900.0	2.501	34.894	244.2	2.044
1700.0	6.068	35.366	231.1	5.902	4950.0	2.506	34.894	244.2	2.043
1750.0	5.604	35.289	236.2	5.439	5000.0	2.511	34.894	244.2	2.041
1800.0	5.316	35.244	239.3	5.150	5050.0	2.516	34.894	244.3	2.040
1850.0	5.070	35.208	241.7	4.902	5100.0	2.522	34.894	244.2	2.039
1900.0	4.892	35.183	243.3	4.721	5150.0	2.528	34.894	244.2	2.038
1950.0	4.634	35.142	246.2	4.462	5200.0	2.533	34.894	244.2	2.037
2000.0	4.363	35.100	249.5	4.189	5250.0	2.539	34.894	244.2	2.036
2050.0	4.146	35.068	251.8	3.971	5300.0	2.546	34.894	244.2	2.036
2100.0	3.975	35.044	253.9	3.798	5350.0	2.552	34.894	244.3	2.036
2150.0	3.883	35.034	253.9	3.702	5354.0	2.553	34.894	244.3	2.036
2200.0	3.931	35.054	250.5	3.744					
2250.0	3.826	35.041	250.6	3.636					
2300.0	3.758	35.035	250.0	3.564					
2350.0	3.698	35.031	249.3	3.501					
2400.0	3.600	35.020	249.7	3.399					
2450.0	3.444	34.998	250.8	3.241					
2500.0	3.336	34.986	252.0	3.129					
2550.0	3.304	34.986	250.7	3.093					
2600.0	3.228	34.977	251.1	3.014					
2650.0	3.169	34.972	251.0	2.951					
2700.0	3.110	34.967	250.9	2.887					
2750.0	3.046	34.961	250.8	2.820					
2800.0	3.007	34.958	250.5	2.777					
2850.0	2.978	34.955	249.6	2.743					
2900.0	2.934	34.952	249.3	2.695					
2950.0	2.897	34.949	248.9	2.654					
3000.0	2.862	34.946	248.5	2.615					

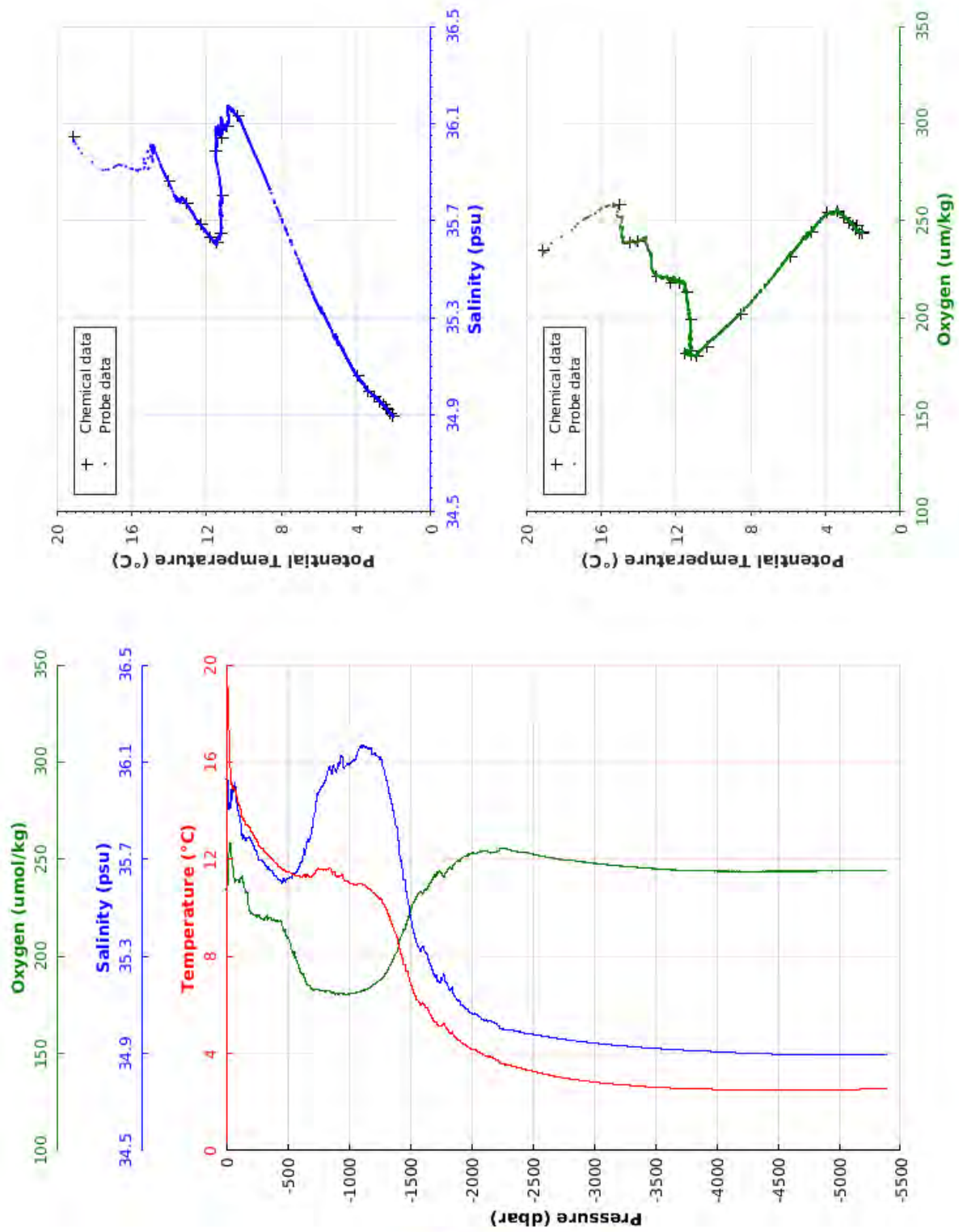


Station: 13

Cruise	: BOCATS 2016			
Station	: 14	Cast	: 1	
Date	: 25/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5305 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 33.13 W 012 39.33			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	19.079	36.029	234.6	19.079	3050.0	2.796	34.940	247.6	2.544
10.0	19.077	36.028	234.4	19.075	3100.0	2.765	34.937	247.2	2.509
20.0	17.557	35.907	245.3	17.554	3150.0	2.742	34.935	247.0	2.482
30.0	15.954	35.913	256.4	15.949	3200.0	2.719	34.933	246.6	2.453
40.0	15.247	35.935	258.1	15.241	3250.0	2.702	34.931	246.4	2.432
50.0	14.908	35.963	249.1	14.900	3300.0	2.682	34.929	246.2	2.407
100.0	14.298	35.901	239.3	14.283	3350.0	2.662	34.927	245.9	2.382
150.0	13.568	35.791	237.3	13.546	3400.0	2.641	34.924	245.6	2.356
200.0	13.178	35.777	223.0	13.150	3450.0	2.626	34.922	245.3	2.335
250.0	12.760	35.730	220.5	12.726	3500.0	2.612	34.921	245.1	2.317
300.0	12.405	35.691	219.4	12.364	3550.0	2.602	34.919	244.8	2.301
350.0	12.132	35.661	219.5	12.085	3600.0	2.586	34.918	244.7	2.281
400.0	11.863	35.633	218.8	11.811	3650.0	2.576	34.916	244.3	2.266
450.0	11.611	35.608	218.2	11.552	3700.0	2.569	34.915	244.3	2.253
500.0	11.488	35.617	209.8	11.423	3750.0	2.558	34.913	244.2	2.236
550.0	11.362	35.637	200.8	11.291	3800.0	2.550	34.912	244.1	2.223
600.0	11.274	35.671	193.7	11.197	3850.0	2.542	34.911	244.0	2.210
650.0	11.249	35.719	188.5	11.166	3900.0	2.537	34.910	244.0	2.199
700.0	11.301	35.819	183.5	11.210	3950.0	2.529	34.909	243.9	2.186
750.0	11.611	35.969	182.9	11.512	4000.0	2.519	34.907	243.9	2.171
800.0	11.565	36.013	182.3	11.459	4050.0	2.508	34.905	243.8	2.154
850.0	11.624	36.083	181.6	11.512	4100.0	2.503	34.904	243.8	2.143
900.0	11.278	36.057	180.7	11.161	4150.0	2.496	34.903	243.8	2.131
950.0	11.340	36.123	180.9	11.215	4200.0	2.489	34.902	243.6	2.118
1000.0	11.050	36.091	180.5	10.921	4250.0	2.487	34.901	243.6	2.110
1050.0	10.955	36.111	181.1	10.819	4300.0	2.484	34.900	243.5	2.102
1100.0	11.014	36.166	181.8	10.871	4350.0	2.483	34.899	243.6	2.094
1150.0	10.846	36.162	183.0	10.697	4400.0	2.481	34.899	243.7	2.086
1200.0	10.602	36.133	185.2	10.449	4450.0	2.480	34.898	243.8	2.079
1250.0	10.400	36.117	187.5	10.242	4500.0	2.478	34.897	243.8	2.071
1300.0	9.985	36.046	190.7	9.824	4550.0	2.478	34.897	243.8	2.065
1350.0	9.354	35.936	196.3	9.192	4600.0	2.478	34.896	243.7	2.060
1400.0	8.555	35.785	203.5	8.396	4650.0	2.481	34.896	243.8	2.056
1450.0	7.651	35.616	213.9	7.495	4700.0	2.484	34.895	243.8	2.052
1500.0	6.933	35.481	221.5	6.779	4750.0	2.487	34.895	243.9	2.049
1550.0	6.238	35.358	230.3	6.087	4800.0	2.490	34.895	243.8	2.047
1600.0	6.064	35.338	232.7	5.909	4850.0	2.495	34.894	244.0	2.044
1650.0	5.739	35.291	235.8	5.582	4900.0	2.499	34.894	244.0	2.042
1700.0	5.338	35.225	241.0	5.182	4950.0	2.504	34.894	244.0	2.040
1750.0	5.125	35.194	243.8	4.967	5000.0	2.509	34.894	244.1	2.040
1800.0	5.030	35.191	243.5	4.868	5050.0	2.514	34.894	244.0	2.038
1850.0	4.841	35.164	245.0	4.676	5100.0	2.520	34.894	244.0	2.037
1900.0	4.541	35.117	249.3	4.375	5150.0	2.525	34.893	244.1	2.036
1950.0	4.352	35.090	251.4	4.183	5200.0	2.531	34.893	244.1	2.035
2000.0	4.169	35.065	253.1	3.999	5250.0	2.538	34.893	244.0	2.035
2050.0	4.088	35.058	253.2	3.914	5300.0	2.545	34.893	244.1	2.035
2100.0	3.934	35.039	254.4	3.757	5350.0	2.551	34.893	244.1	2.035
2150.0	3.873	35.036	253.5	3.692	5400.0	2.558	34.894	244.1	2.035
2200.0	3.762	35.024	253.6	3.578	5404.0	2.559	34.893	244.3	2.035
2250.0	3.592	35.001	255.8	3.406					
2300.0	3.524	34.996	255.2	3.334					
2350.0	3.468	34.994	254.1	3.275					
2400.0	3.404	34.989	253.5	3.206					
2450.0	3.322	34.981	253.6	3.121					
2500.0	3.268	34.979	252.7	3.063					
2550.0	3.209	34.975	251.9	3.000					
2600.0	3.151	34.971	251.3	2.938					
2650.0	3.094	34.966	250.9	2.877					
2700.0	3.044	34.962	250.4	2.824					
2750.0	3.001	34.959	249.8	2.776					
2800.0	2.957	34.955	249.5	2.728					
2850.0	2.926	34.952	249.2	2.693					
2900.0	2.892	34.949	248.7	2.654					
2950.0	2.856	34.946	248.3	2.613					
3000.0	2.823	34.943	247.9	2.576					

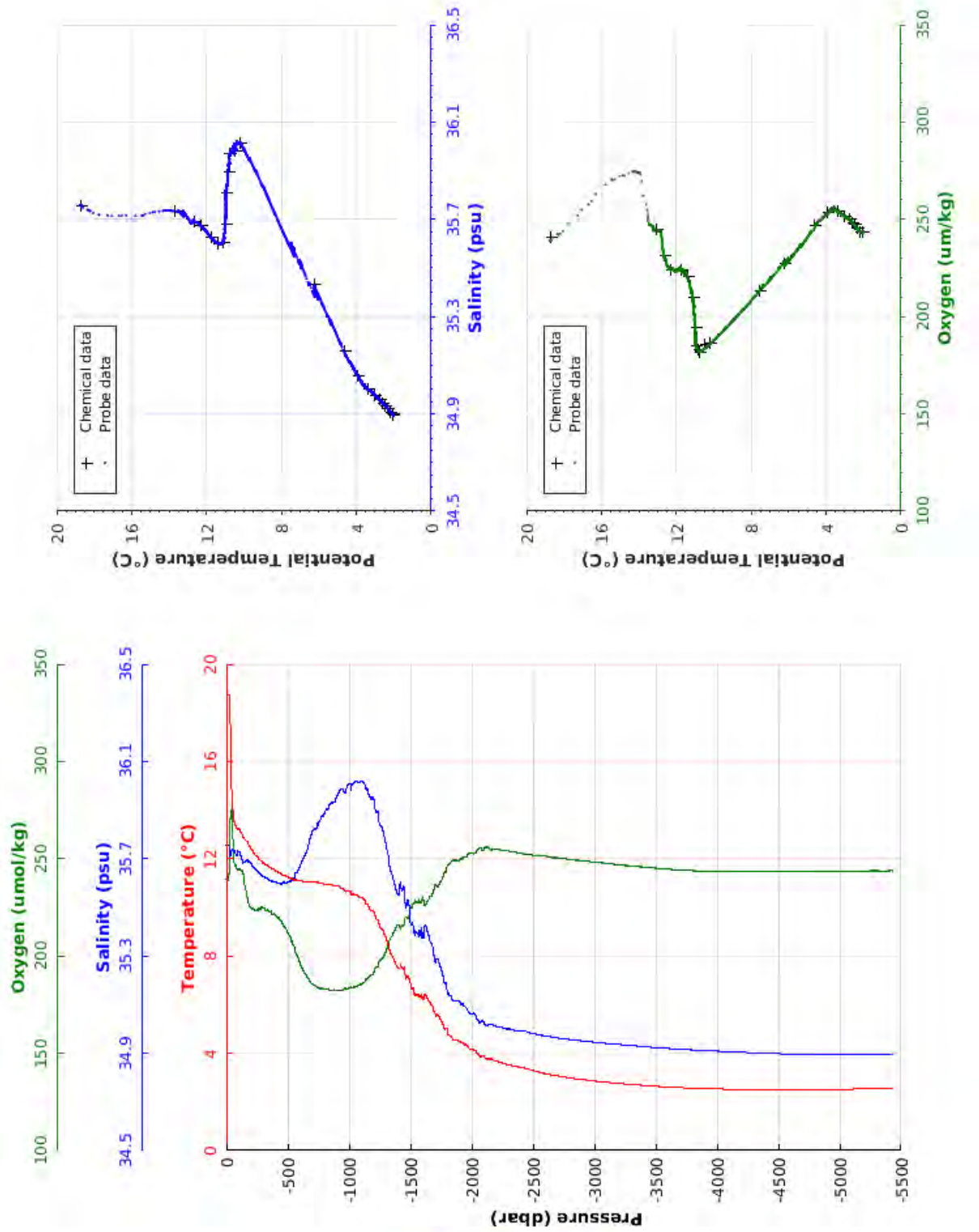




Station: 14

Cruise	: BOCATS 2016			
Station	: 15	Cast	: 1	
Date	: 25/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5345 m	Organism	: CSIC/IIM VIGO	
Position	: N 40 56.17 W 013 17.71			

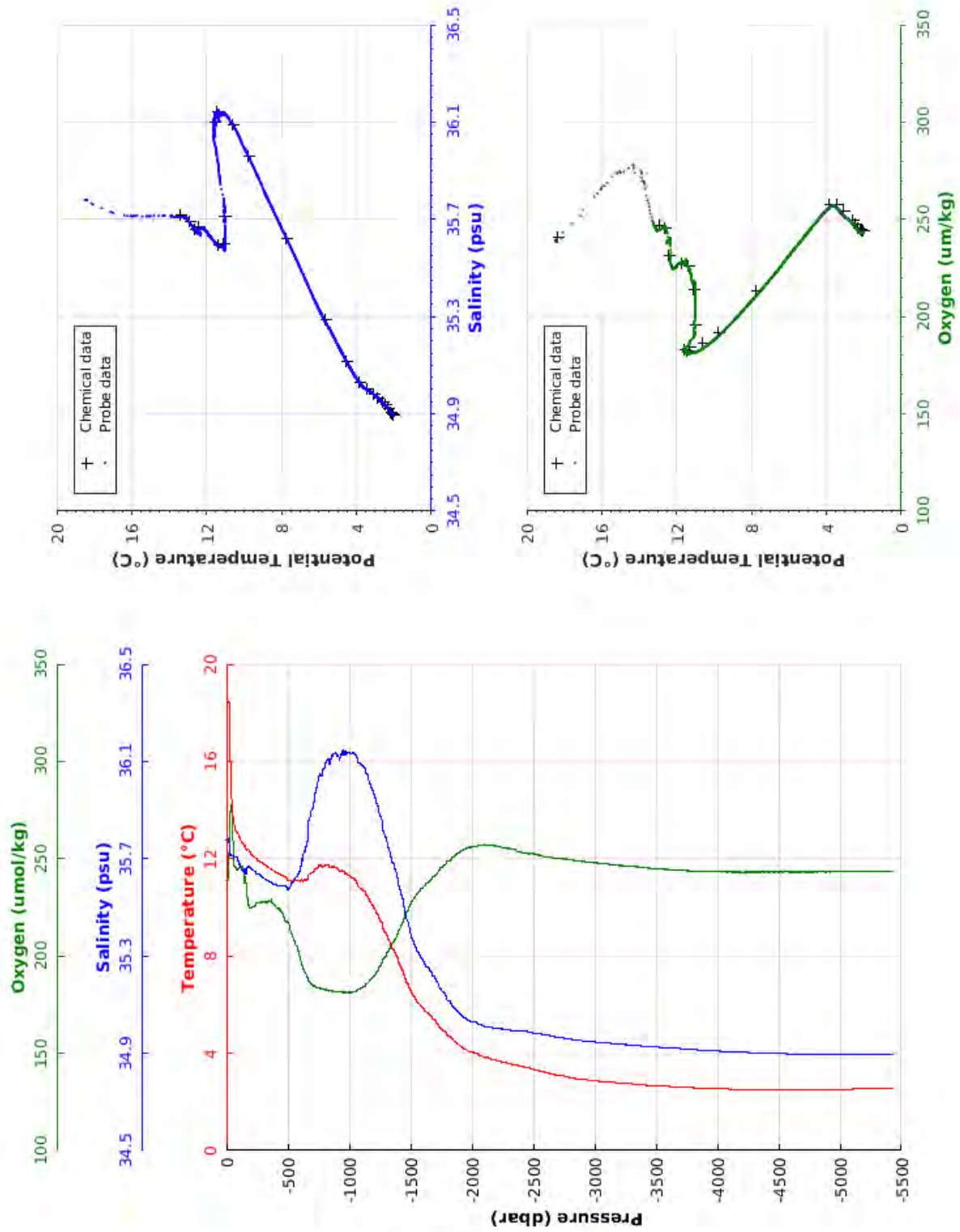
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.726	35.757	239.3	18.726	3050.0	2.834	34.943	247.9	2.581
10.0	18.724	35.757	239.2	18.722	3100.0	2.809	34.941	247.6	2.552
20.0	18.717	35.757	239.2	18.713	3150.0	2.786	34.938	247.3	2.524
30.0	18.057	35.725	244.0	18.051	3200.0	2.764	34.936	246.9	2.497
40.0	15.278	35.722	270.7	15.272	3250.0	2.739	34.934	246.6	2.468
50.0	14.151	35.737	274.5	14.144	3300.0	2.721	34.932	246.3	2.445
100.0	13.235	35.731	244.3	13.221	3350.0	2.701	34.930	246.0	2.419
150.0	12.790	35.686	239.5	12.769	3400.0	2.678	34.927	245.7	2.392
200.0	12.440	35.683	225.0	12.413	3450.0	2.661	34.926	245.4	2.370
250.0	12.080	35.654	223.5	12.047	3500.0	2.643	34.923	245.1	2.347
300.0	11.820	35.627	225.0	11.781	3550.0	2.625	34.921	244.8	2.324
350.0	11.658	35.615	222.4	11.613	3600.0	2.612	34.920	244.6	2.306
400.0	11.515	35.604	221.0	11.463	3650.0	2.596	34.918	244.5	2.285
450.0	11.352	35.597	218.1	11.294	3700.0	2.584	34.916	244.3	2.267
500.0	11.250	35.605	212.5	11.186	3750.0	2.575	34.915	244.1	2.253
550.0	11.137	35.621	205.7	11.067	3800.0	2.566	34.914	243.8	2.238
600.0	11.093	35.666	197.4	11.017	3850.0	2.556	34.912	243.7	2.223
650.0	11.049	35.719	190.9	10.967	3900.0	2.549	34.911	243.6	2.210
700.0	11.071	35.808	185.8	10.981	3950.0	2.541	34.910	243.6	2.198
750.0	10.979	35.837	183.9	10.884	4000.0	2.537	34.909	243.5	2.187
800.0	10.958	35.884	183.0	10.856	4050.0	2.527	34.907	243.4	2.173
850.0	10.937	35.924	182.6	10.829	4100.0	2.520	34.906	243.4	2.159
900.0	10.905	35.959	182.1	10.789	4150.0	2.515	34.905	243.3	2.149
950.0	10.771	35.985	182.5	10.650	4200.0	2.509	34.904	243.4	2.137
1000.0	10.671	36.006	183.2	10.544	4250.0	2.502	34.903	243.4	2.125
1050.0	10.516	36.013	184.3	10.384	4300.0	2.494	34.901	243.3	2.111
1100.0	10.398	36.018	185.3	10.260	4350.0	2.489	34.900	243.4	2.100
1150.0	10.124	35.987	187.9	9.982	4400.0	2.489	34.900	243.4	2.094
1200.0	9.844	35.948	190.8	9.698	4450.0	2.486	34.899	243.4	2.085
1250.0	9.229	35.845	197.0	9.082	4500.0	2.485	34.898	243.5	2.078
1300.0	8.759	35.768	201.8	8.609	4550.0	2.486	34.898	243.3	2.073
1350.0	8.014	35.639	209.8	7.866	4600.0	2.487	34.897	243.5	2.068
1400.0	7.486	35.552	215.8	7.337	4650.0	2.489	34.897	243.5	2.064
1450.0	7.516	35.585	215.2	7.362	4700.0	2.492	34.896	243.3	2.060
1500.0	6.867	35.467	222.0	6.714	4750.0	2.494	34.896	243.5	2.057
1550.0	6.432	35.398	227.7	6.278	4800.0	2.498	34.896	243.5	2.054
1600.0	6.267	35.387	228.6	6.110	4850.0	2.502	34.895	243.5	2.051
1650.0	6.177	35.385	228.5	6.015	4900.0	2.506	34.895	243.5	2.049
1700.0	5.693	35.300	234.3	5.532	4950.0	2.511	34.895	243.5	2.048
1750.0	5.340	35.248	238.2	5.179	5000.0	2.516	34.895	243.6	2.046
1800.0	4.867	35.163	244.3	4.706	5050.0	2.521	34.894	243.6	2.045
1850.0	4.562	35.116	249.3	4.401	5100.0	2.526	34.894	243.5	2.043
1900.0	4.490	35.111	249.2	4.325	5150.0	2.531	34.894	243.6	2.042
1950.0	4.341	35.091	250.7	4.173	5200.0	2.537	34.894	243.7	2.041
2000.0	4.152	35.063	252.8	3.982	5250.0	2.543	34.894	243.8	2.040
2050.0	3.967	35.038	254.6	3.795	5300.0	2.548	34.894	243.8	2.038
2100.0	3.870	35.029	254.5	3.694	5350.0	2.554	34.894	243.7	2.037
2150.0	3.774	35.020	255.2	3.595	5400.0	2.559	34.894	243.7	2.036
2200.0	3.676	35.011	254.7	3.494	5444.0	2.564	34.893	244.1	2.034
2250.0	3.592	35.005	254.2	3.406					
2300.0	3.532	35.000	254.0	3.342					
2350.0	3.468	34.995	253.3	3.274					
2400.0	3.410	34.991	252.9	3.212					
2450.0	3.374	34.989	252.2	3.172					
2500.0	3.295	34.983	251.8	3.089					
2550.0	3.220	34.976	251.6	3.010					
2600.0	3.163	34.971	251.5	2.950					
2650.0	3.113	34.967	250.7	2.896					
2700.0	3.066	34.963	250.5	2.845					
2750.0	3.019	34.959	250.1	2.793					
2800.0	2.986	34.956	249.7	2.756					
2850.0	2.948	34.953	249.2	2.714					
2900.0	2.923	34.951	249.1	2.685					
2950.0	2.887	34.948	248.6	2.644					
3000.0	2.859	34.945	248.4	2.611					



Station: 15

Cruise	: BOCATS 2016			
Station	: 16	Cast	: 1	
Date	: 26/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5346 m	Organism	: CSIC/IIM VIGO	
Position	: N 41 22.94 W 013 53.42			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.434	35.780	239.1	18.434	3050.0	2.845	34.944	247.8	2.592
10.0	18.434	35.780	239.1	18.432	3100.0	2.827	34.942	247.4	2.570
20.0	18.439	35.780	238.7	18.435	3150.0	2.802	34.940	247.0	2.540
30.0	16.238	35.714	263.4	16.233	3200.0	2.777	34.938	246.7	2.510
40.0	15.007	35.713	274.0	15.001	3250.0	2.759	34.936	246.3	2.487
50.0	13.876	35.713	273.7	13.869	3300.0	2.742	34.934	246.2	2.465
100.0	12.949	35.689	244.6	12.936	3350.0	2.717	34.931	245.8	2.436
150.0	12.521	35.654	239.1	12.501	3400.0	2.697	34.929	245.4	2.411
200.0	12.188	35.661	224.8	12.161	3450.0	2.677	34.927	245.1	2.386
250.0	11.925	35.637	227.1	11.892	3500.0	2.664	34.926	244.9	2.367
300.0	11.785	35.622	227.4	11.746	3550.0	2.648	34.924	244.6	2.347
350.0	11.620	35.607	228.0	11.575	3600.0	2.639	34.922	244.5	2.332
400.0	11.457	35.593	226.2	11.405	3650.0	2.623	34.921	244.2	2.311
450.0	11.337	35.587	223.6	11.280	3700.0	2.611	34.919	244.0	2.294
500.0	11.107	35.575	217.7	11.044	3750.0	2.595	34.917	243.8	2.272
550.0	11.098	35.609	209.3	11.028	3800.0	2.580	34.915	243.8	2.253
600.0	11.072	35.651	200.3	10.996	3850.0	2.570	34.914	243.5	2.236
650.0	11.105	35.741	191.1	11.023	3900.0	2.560	34.912	243.5	2.222
700.0	11.444	35.902	185.3	11.353	3950.0	2.553	34.911	243.4	2.209
750.0	11.716	36.026	183.6	11.617	4000.0	2.536	34.909	243.3	2.187
800.0	11.715	36.073	183.0	11.608	4050.0	2.533	34.908	243.2	2.178
850.0	11.617	36.089	182.5	11.505	4100.0	2.527	34.907	243.2	2.166
900.0	11.607	36.129	181.8	11.487	4150.0	2.521	34.906	243.2	2.154
950.0	11.468	36.131	181.3	11.342	4200.0	2.514	34.905	243.1	2.142
1000.0	11.306	36.138	181.3	11.174	4250.0	2.506	34.903	243.2	2.128
1050.0	11.117	36.130	181.6	10.980	4300.0	2.504	34.902	243.1	2.121
1100.0	10.759	36.090	183.5	10.618	4350.0	2.498	34.901	243.1	2.109
1150.0	10.453	36.047	185.7	10.308	4400.0	2.494	34.900	243.2	2.099
1200.0	10.018	35.975	189.0	9.870	4450.0	2.491	34.899	243.2	2.090
1250.0	9.471	35.883	194.3	9.322	4500.0	2.491	34.899	243.2	2.084
1300.0	8.919	35.788	199.8	8.768	4550.0	2.491	34.898	243.3	2.078
1350.0	8.310	35.689	206.3	8.159	4600.0	2.490	34.897	243.2	2.071
1400.0	7.827	35.610	211.3	7.675	4650.0	2.493	34.897	243.1	2.067
1450.0	7.172	35.501	219.1	7.021	4700.0	2.494	34.897	243.3	2.063
1500.0	6.576	35.398	226.0	6.426	4750.0	2.496	34.896	243.1	2.058
1550.0	6.136	35.327	231.5	5.985	4800.0	2.499	34.896	243.2	2.055
1600.0	5.884	35.288	234.6	5.732	4850.0	2.503	34.895	243.3	2.053
1650.0	5.619	35.252	237.9	5.465	4900.0	2.507	34.895	243.3	2.050
1700.0	5.355	35.214	240.6	5.199	4950.0	2.511	34.895	243.3	2.048
1750.0	4.998	35.160	245.4	4.841	5000.0	2.516	34.895	243.2	2.046
1800.0	4.733	35.119	248.3	4.575	5050.0	2.521	34.895	243.2	2.044
1850.0	4.517	35.091	251.0	4.357	5100.0	2.526	34.894	243.2	2.043
1900.0	4.306	35.063	253.3	4.144	5150.0	2.532	34.894	243.3	2.042
1950.0	4.151	35.044	255.0	3.986	5200.0	2.538	34.894	243.4	2.041
2000.0	4.038	35.032	255.9	3.870	5250.0	2.543	34.894	243.4	2.040
2050.0	3.967	35.023	256.4	3.795	5300.0	2.548	34.894	243.4	2.038
2100.0	3.828	35.011	257.1	3.653	5350.0	2.554	34.894	243.4	2.038
2150.0	3.770	35.007	257.1	3.591	5400.0	2.561	34.894	243.6	2.038
2200.0	3.714	35.004	256.5	3.531	5444.0	2.567	34.894	243.7	2.038
2250.0	3.643	35.001	255.8	3.456					
2300.0	3.564	34.995	255.4	3.374					
2350.0	3.518	34.993	254.9	3.323					
2400.0	3.463	34.993	253.4	3.265					
2450.0	3.404	34.989	252.6	3.201					
2500.0	3.341	34.983	252.5	3.135					
2550.0	3.279	34.980	251.8	3.068					
2600.0	3.220	34.976	250.9	3.005					
2650.0	3.143	34.970	250.6	2.926					
2700.0	3.101	34.966	250.0	2.879					
2750.0	3.065	34.963	249.9	2.839					
2800.0	3.004	34.958	249.4	2.774					
2850.0	2.956	34.954	249.1	2.722					
2900.0	2.926	34.951	248.6	2.688					
2950.0	2.899	34.949	248.2	2.655					
3000.0	2.875	34.947	248.0	2.627					

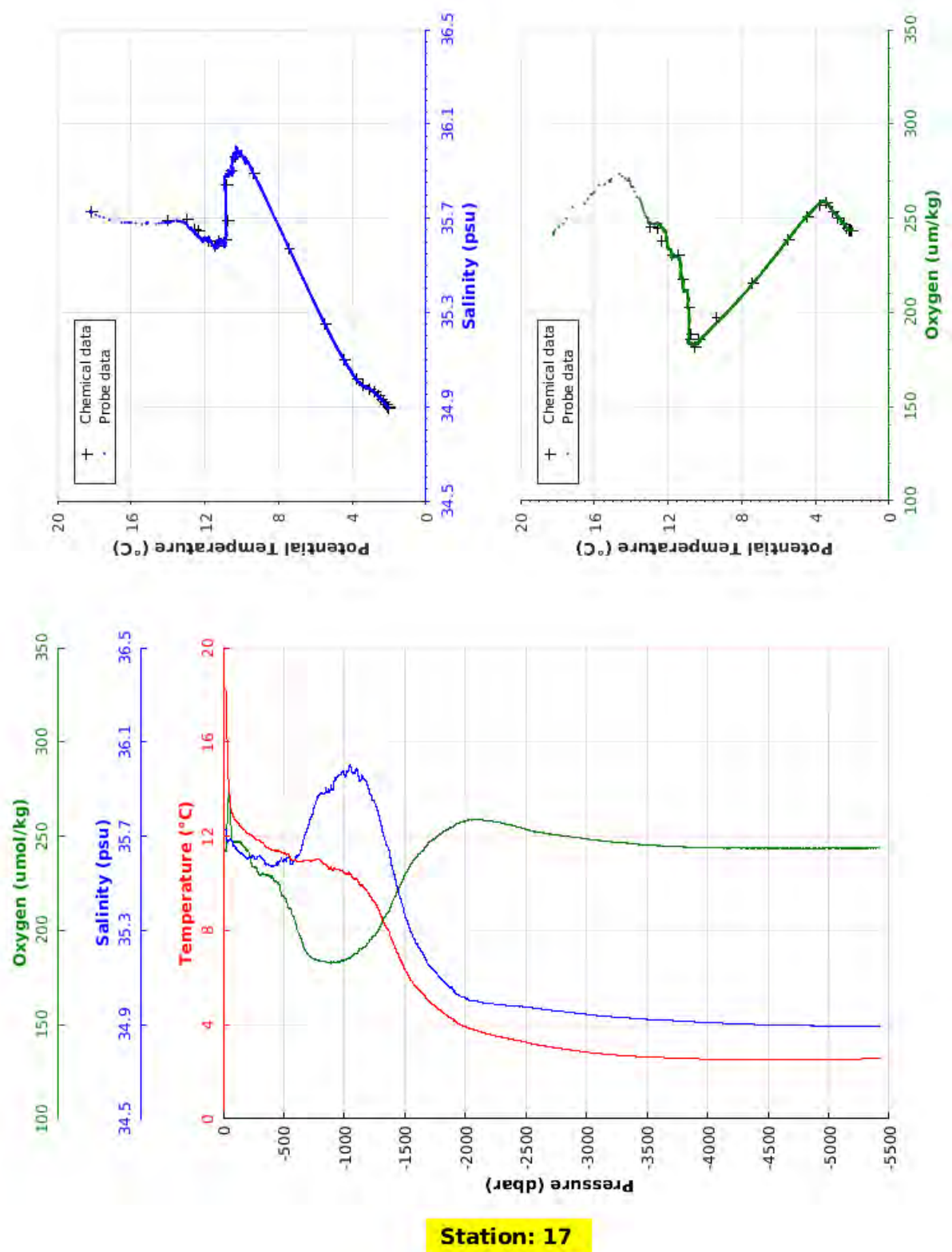


Station: 16



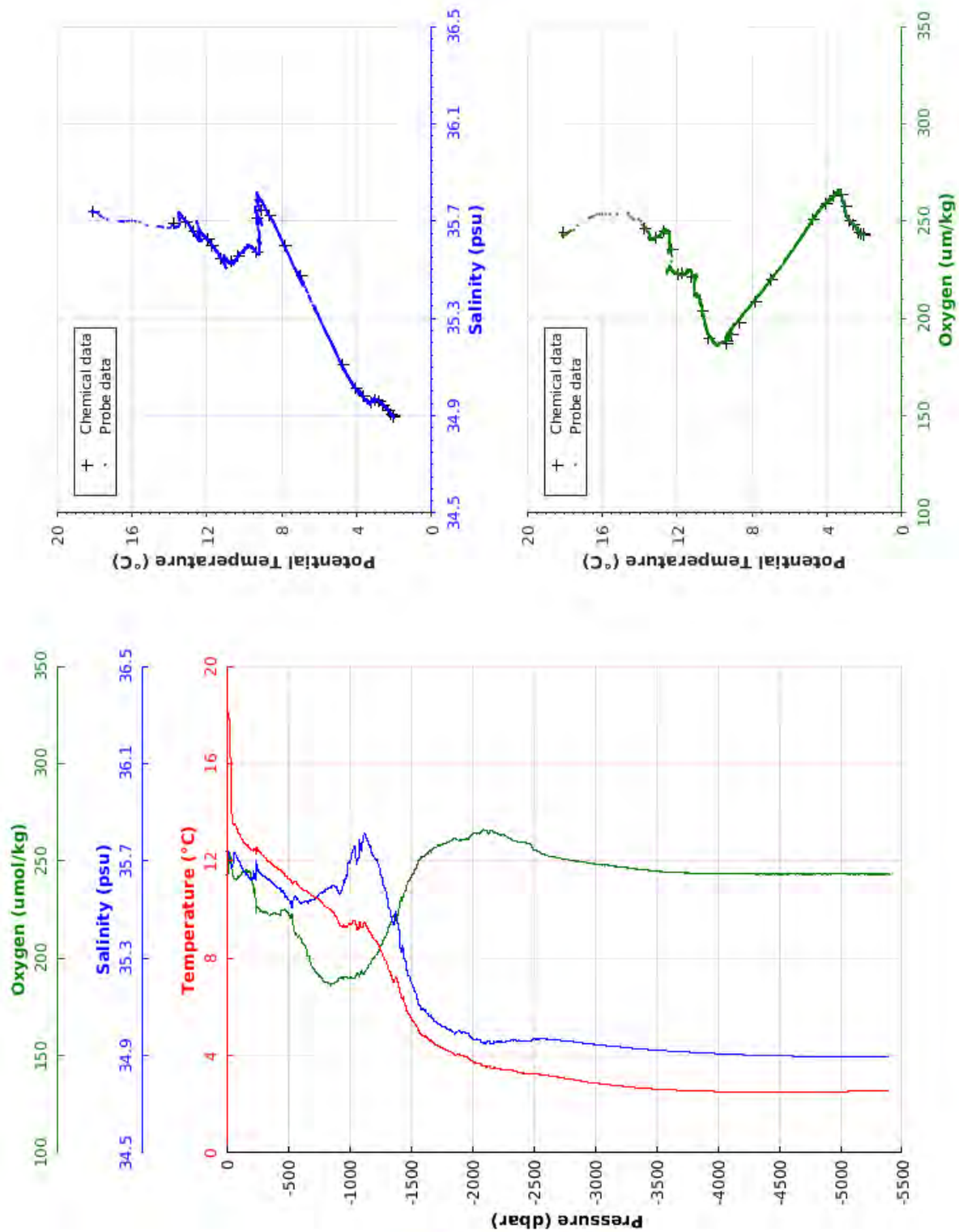
Cruise	: BOCATS 2016			
Station	: 17	Cast	: 1	
Date	: 26/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5333 m	Organism	: CSIC/IIM VIGO	
Position	: N 41 50.16 W 014 28.63			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.221	35.728	242.4	18.220	3050.0	2.802	34.941	248.0	2.550
10.0	18.220	35.728	242.1	18.218	3100.0	2.775	34.938	247.7	2.519
20.0	18.228	35.729	241.8	18.225	3150.0	2.748	34.936	247.3	2.487
30.0	16.185	35.682	262.7	16.180	3200.0	2.728	34.934	247.0	2.462
40.0	15.074	35.680	270.7	15.068	3250.0	2.712	34.932	246.8	2.441
50.0	13.961	35.684	266.6	13.954	3300.0	2.696	34.930	246.5	2.420
100.0	12.689	35.649	247.1	12.675	3350.0	2.679	34.928	246.2	2.399
150.0	12.396	35.625	246.6	12.376	3400.0	2.657	34.926	245.9	2.372
200.0	12.139	35.606	241.8	12.112	3450.0	2.642	34.924	245.6	2.351
250.0	11.964	35.612	233.6	11.931	3500.0	2.629	34.923	245.4	2.334
300.0	11.830	35.616	228.9	11.791	3550.0	2.618	34.921	245.2	2.317
350.0	11.592	35.585	229.4	11.547	3600.0	2.605	34.920	244.9	2.299
400.0	11.418	35.573	228.6	11.366	3650.0	2.601	34.919	244.6	2.289
450.0	11.372	35.585	225.5	11.314	3700.0	2.594	34.918	244.7	2.277
500.0	11.265	35.594	218.0	11.201	3750.0	2.584	34.916	244.6	2.262
550.0	11.063	35.586	211.7	10.993	3800.0	2.572	34.915	244.2	2.244
600.0	11.002	35.616	202.3	10.926	3850.0	2.561	34.913	244.2	2.229
650.0	10.925	35.656	193.6	10.843	3900.0	2.552	34.912	244.1	2.214
700.0	10.955	35.740	187.3	10.866	3950.0	2.542	34.910	244.0	2.198
750.0	10.993	35.826	184.6	10.897	4000.0	2.534	34.909	243.9	2.184
800.0	10.990	35.879	183.7	10.888	4050.0	2.533	34.908	243.9	2.178
850.0	10.752	35.889	182.9	10.644	4100.0	2.528	34.907	243.8	2.167
900.0	10.572	35.900	183.1	10.459	4150.0	2.521	34.906	243.6	2.155
950.0	10.587	35.958	183.5	10.468	4200.0	2.516	34.905	243.7	2.144
1000.0	10.435	35.960	184.3	10.310	4250.0	2.513	34.904	243.8	2.135
1050.0	10.407	35.998	185.4	10.276	4300.0	2.507	34.903	243.8	2.124
1100.0	10.208	35.985	187.6	10.071	4350.0	2.502	34.902	243.7	2.112
1150.0	9.933	35.954	190.4	9.792	4400.0	2.500	34.901	243.7	2.105
1200.0	9.558	35.898	193.9	9.414	4450.0	2.496	34.900	243.7	2.095
1250.0	9.187	35.841	197.5	9.040	4500.0	2.495	34.899	243.6	2.088
1300.0	8.664	35.754	202.9	8.516	4550.0	2.494	34.898	243.8	2.081
1350.0	8.107	35.661	209.1	7.958	4600.0	2.496	34.898	243.7	2.077
1400.0	7.490	35.556	216.0	7.342	4650.0	2.494	34.897	243.6	2.069
1450.0	6.910	35.458	222.7	6.762	4700.0	2.497	34.897	243.7	2.065
1500.0	6.356	35.366	229.7	6.208	4750.0	2.499	34.897	243.6	2.061
1550.0	5.892	35.291	235.5	5.744	4800.0	2.503	34.896	243.6	2.059
1600.0	5.581	35.241	239.7	5.432	4850.0	2.505	34.896	243.6	2.055
1650.0	5.313	35.199	242.8	5.162	4900.0	2.509	34.896	243.6	2.052
1700.0	4.991	35.151	247.0	4.839	4950.0	2.513	34.895	243.5	2.050
1750.0	4.797	35.125	249.1	4.643	5000.0	2.518	34.895	243.7	2.048
1800.0	4.577	35.094	251.4	4.421	5050.0	2.522	34.895	243.7	2.046
1850.0	4.376	35.068	253.6	4.218	5100.0	2.528	34.895	243.7	2.045
1900.0	4.212	35.048	255.3	4.051	5150.0	2.532	34.894	243.6	2.043
1950.0	4.024	35.023	257.1	3.860	5200.0	2.538	34.894	243.6	2.042
2000.0	3.921	35.012	258.1	3.755	5250.0	2.545	34.894	243.6	2.041
2050.0	3.814	35.003	258.6	3.644	5300.0	2.550	34.894	243.7	2.041
2100.0	3.743	34.999	258.9	3.569	5350.0	2.556	34.894	243.7	2.039
2150.0	3.648	34.990	258.5	3.471	5400.0	2.562	34.894	243.8	2.039
2200.0	3.591	34.990	258.2	3.410	5433.0	2.567	34.894	243.8	2.039
2250.0	3.527	34.987	257.5	3.342					
2300.0	3.472	34.984	256.8	3.283					
2350.0	3.415	34.981	256.4	3.222					
2400.0	3.361	34.979	255.4	3.164					
2450.0	3.311	34.977	254.5	3.110					
2500.0	3.254	34.974	253.7	3.049					
2550.0	3.191	34.971	252.6	2.983					
2600.0	3.139	34.968	252.1	2.926					
2650.0	3.091	34.965	251.7	2.874					
2700.0	3.059	34.962	251.3	2.838					
2750.0	3.010	34.958	250.7	2.785					
2800.0	2.980	34.956	250.3	2.751					
2850.0	2.942	34.953	249.8	2.708					
2900.0	2.904	34.950	249.5	2.665					
2950.0	2.869	34.947	249.0	2.626					
3000.0	2.840	34.944	248.6	2.593					



Cruise	: BOCATS 2016			
Station	: 18	Cast	: 1	
Date	: 26/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5306 m	Organism	: CSIC/IIM VIGO	
Position	: N 42 16.82			
	W 015 3.75			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.110	35.740	242.9	18.110	3050.0	2.839	34.943	248.0	2.586
10.0	18.112	35.740	242.5	18.110	3100.0	2.809	34.941	247.9	2.552
20.0	17.836	35.735	243.8	17.833	3150.0	2.783	34.938	247.3	2.522
30.0	16.464	35.700	252.8	16.459	3200.0	2.756	34.936	246.9	2.489
40.0	14.338	35.675	250.9	14.332	3250.0	2.727	34.933	246.6	2.456
50.0	13.607	35.676	244.5	13.600	3300.0	2.699	34.930	246.1	2.423
100.0	13.138	35.700	241.9	13.124	3350.0	2.678	34.928	245.7	2.398
150.0	12.715	35.652	244.9	12.695	3400.0	2.661	34.926	245.4	2.375
200.0	12.457	35.621	244.0	12.430	3450.0	2.640	34.924	245.1	2.350
250.0	12.464	35.672	225.6	12.430	3500.0	2.625	34.922	244.8	2.329
300.0	12.202	35.640	223.8	12.162	3550.0	2.609	34.920	244.4	2.308
350.0	11.964	35.623	222.2	11.918	3600.0	2.597	34.919	244.2	2.291
400.0	11.756	35.600	222.9	11.704	3650.0	2.586	34.917	244.0	2.275
450.0	11.540	35.573	224.2	11.482	3700.0	2.578	34.916	244.0	2.261
500.0	11.286	35.544	223.6	11.222	3750.0	2.567	34.915	243.8	2.246
550.0	11.159	35.548	216.3	11.089	3800.0	2.557	34.913	243.7	2.230
600.0	10.874	35.525	211.2	10.798	3850.0	2.548	34.912	243.6	2.216
650.0	10.764	35.536	205.6	10.683	3900.0	2.540	34.911	243.6	2.202
700.0	10.562	35.541	195.6	10.476	3950.0	2.531	34.909	243.5	2.188
750.0	10.413	35.556	191.9	10.321	4000.0	2.523	34.908	243.4	2.174
800.0	10.135	35.572	187.5	10.038	4050.0	2.520	34.907	243.3	2.166
850.0	9.979	35.592	186.5	9.877	4100.0	2.513	34.906	243.3	2.153
900.0	9.626	35.588	187.8	9.520	4150.0	2.508	34.905	243.3	2.142
950.0	9.314	35.599	190.0	9.203	4200.0	2.500	34.903	243.4	2.128
1000.0	9.434	35.693	189.7	9.316	4250.0	2.497	34.903	243.3	2.120
1050.0	9.457	35.736	189.9	9.333	4300.0	2.494	34.902	243.3	2.111
1100.0	9.262	35.741	192.9	9.133	4350.0	2.492	34.901	243.2	2.103
1150.0	9.239	35.784	194.7	9.104	4400.0	2.490	34.900	243.1	2.095
1200.0	8.786	35.719	199.7	8.649	4450.0	2.493	34.900	243.3	2.092
1250.0	8.427	35.669	204.4	8.287	4500.0	2.491	34.899	243.2	2.084
1300.0	7.860	35.575	211.0	7.720	4550.0	2.493	34.899	243.2	2.080
1350.0	7.158	35.458	219.5	7.019	4600.0	2.495	34.898	243.2	2.076
1400.0	6.984	35.445	222.1	6.841	4650.0	2.494	34.897	243.2	2.068
1450.0	6.101	35.297	233.4	5.962	4700.0	2.498	34.897	243.2	2.066
1500.0	5.551	35.208	241.0	5.413	4750.0	2.499	34.897	243.3	2.061
1550.0	5.207	35.153	246.1	5.068	4800.0	2.504	34.896	243.2	2.060
1600.0	4.831	35.092	252.1	4.691	4850.0	2.508	34.896	243.1	2.057
1650.0	4.625	35.062	254.7	4.483	4900.0	2.511	34.896	243.3	2.054
1700.0	4.462	35.041	256.8	4.317	4950.0	2.516	34.896	243.2	2.053
1750.0	4.319	35.023	258.4	4.171	5000.0	2.521	34.896	243.3	2.051
1800.0	4.197	35.010	259.2	4.046	5050.0	2.526	34.895	243.3	2.049
1850.0	4.071	34.996	260.9	3.917	5100.0	2.532	34.895	243.2	2.048
1900.0	4.050	35.002	260.2	3.891	5150.0	2.537	34.895	243.1	2.047
1950.0	3.941	34.992	261.3	3.780	5200.0	2.542	34.895	243.2	2.046
2000.0	3.781	34.973	263.3	3.616	5250.0	2.548	34.895	243.2	2.045
2050.0	3.674	34.964	264.3	3.507	5300.0	2.554	34.895	243.1	2.044
2100.0	3.554	34.952	265.8	3.383	5350.0	2.561	34.895	243.1	2.044
2150.0	3.479	34.948	265.5	3.305	5400.0	2.568	34.895	243.1	2.044
2200.0	3.475	34.958	264.0	3.296	5404.0	2.568	34.895	243.3	2.044
2250.0	3.422	34.956	263.4	3.239					
2300.0	3.396	34.960	262.0	3.209					
2350.0	3.363	34.964	260.2	3.171					
2400.0	3.304	34.961	259.4	3.108					
2450.0	3.267	34.959	259.1	3.067					
2500.0	3.273	34.969	256.4	3.068					
2550.0	3.238	34.969	254.8	3.029					
2600.0	3.191	34.968	253.1	2.977					
2650.0	3.147	34.966	252.2	2.929					
2700.0	3.113	34.964	251.5	2.891					
2750.0	3.066	34.961	250.9	2.839					
2800.0	3.031	34.958	250.5	2.800					
2850.0	2.987	34.955	249.9	2.752					
2900.0	2.942	34.952	249.4	2.703					
2950.0	2.899	34.949	248.9	2.655					
3000.0	2.868	34.946	248.4	2.620					

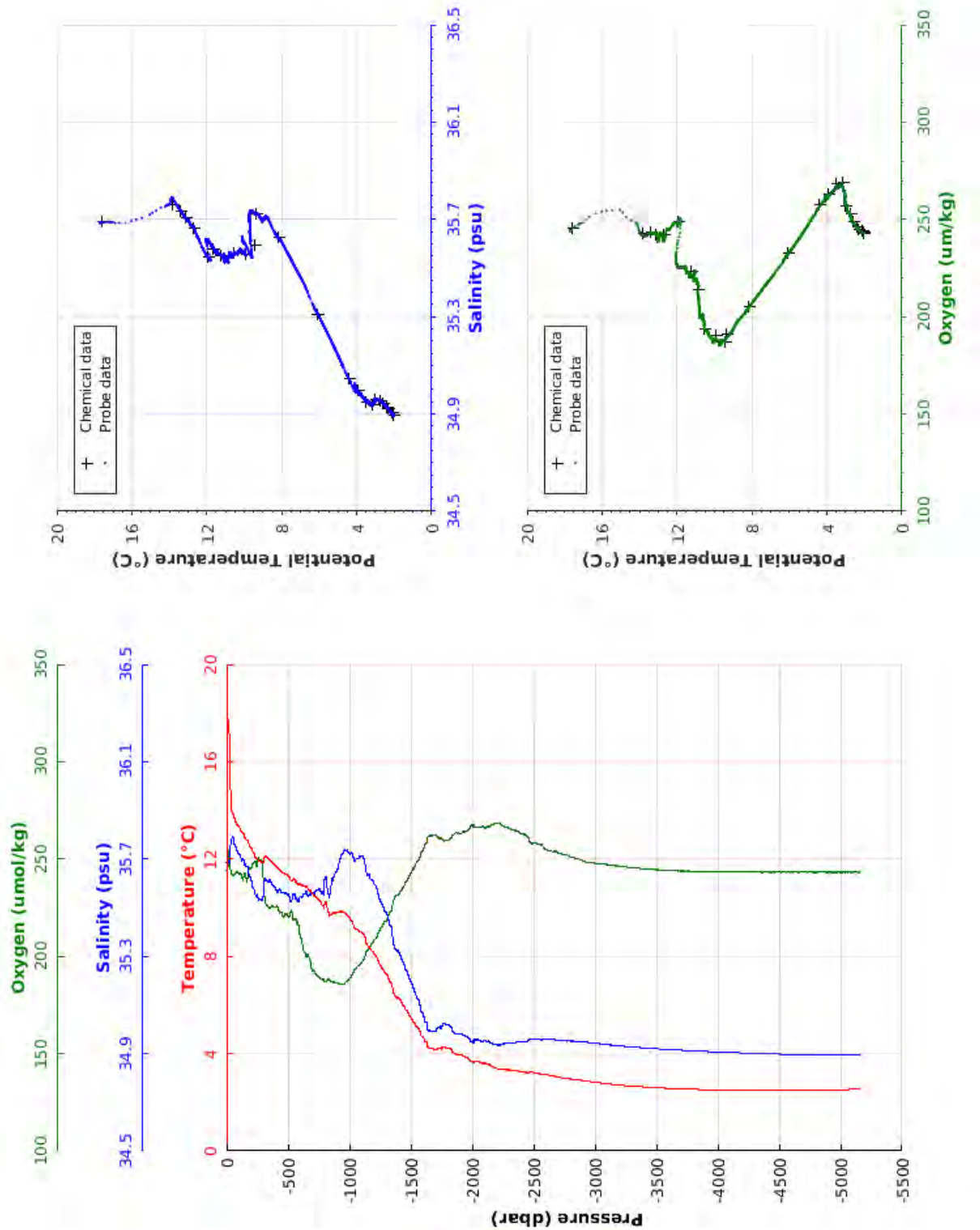


**Station: 18**

Cruise	: BOCATS 2016			
Station	: 19	Cast	: 1	
Date	: 27/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5070 m	Organism	: CSIC/IIM VIGO	
Position	: N 42 34.74 W 015 27.57			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.710	35.687	244.5	17.710	3050.0	2.788	34.940	247.5	2.536
10.0	17.711	35.687	244.5	17.710	3100.0	2.761	34.937	247.2	2.505
20.0	17.229	35.690	247.5	17.225	3150.0	2.732	34.934	246.5	2.472
30.0	15.045	35.720	254.9	15.040	3200.0	2.711	34.932	246.4	2.445
40.0	13.975	35.761	243.4	13.969	3250.0	2.687	34.930	245.9	2.417
50.0	13.872	35.791	242.0	13.865	3300.0	2.663	34.927	245.6	2.388
100.0	13.308	35.724	242.9	13.294	3350.0	2.644	34.925	245.3	2.364
150.0	12.891	35.678	243.1	12.870	3400.0	2.629	34.924	245.0	2.345
200.0	12.462	35.619	244.6	12.435	3450.0	2.613	34.922	244.8	2.323
250.0	12.015	35.554	246.5	11.982	3500.0	2.603	34.920	244.5	2.308
300.0	11.872	35.543	247.2	11.833	3550.0	2.585	34.918	244.3	2.285
350.0	11.957	35.605	225.3	11.911	3600.0	2.572	34.917	244.1	2.267
400.0	11.717	35.584	225.3	11.665	3650.0	2.566	34.916	243.9	2.256
450.0	11.463	35.563	222.7	11.405	3700.0	2.556	34.914	243.9	2.240
500.0	11.303	35.554	221.6	11.239	3750.0	2.546	34.913	243.8	2.225
550.0	11.155	35.552	219.5	11.085	3800.0	2.537	34.911	243.6	2.210
600.0	10.976	35.546	211.9	10.900	3850.0	2.527	34.910	243.6	2.195
650.0	10.860	35.565	200.0	10.778	3900.0	2.522	34.909	243.4	2.184
700.0	10.583	35.561	193.2	10.497	3950.0	2.514	34.908	243.4	2.171
750.0	10.335	35.573	189.5	10.243	4000.0	2.507	34.906	243.3	2.158
800.0	10.179	35.613	187.4	10.082	4050.0	2.504	34.906	243.3	2.150
850.0	9.706	35.571	187.6	9.605	4100.0	2.499	34.904	243.3	2.139
900.0	9.814	35.652	186.1	9.706	4150.0	2.496	34.904	243.3	2.130
950.0	9.828	35.723	185.7	9.714	4200.0	2.494	34.903	243.3	2.123
1000.0	9.580	35.724	187.9	9.461	4250.0	2.490	34.902	243.3	2.113
1050.0	9.138	35.692	193.3	9.016	4300.0	2.486	34.901	243.3	2.103
1100.0	8.978	35.712	196.6	8.851	4350.0	2.484	34.900	243.2	2.096
1150.0	8.435	35.638	202.9	8.307	4400.0	2.485	34.900	243.2	2.090
1200.0	8.090	35.601	207.5	7.959	4450.0	2.485	34.899	243.2	2.084
1250.0	7.631	35.534	213.4	7.498	4500.0	2.483	34.898	243.2	2.076
1300.0	7.284	35.484	218.0	7.149	4550.0	2.483	34.898	243.2	2.070
1350.0	6.760	35.401	224.6	6.625	4600.0	2.485	34.897	243.2	2.066
1400.0	6.278	35.322	231.4	6.142	4650.0	2.488	34.897	243.2	2.062
1450.0	5.917	35.265	236.1	5.780	4700.0	2.491	34.896	243.2	2.060
1500.0	5.481	35.197	242.3	5.344	4750.0	2.494	34.896	243.2	2.056
1550.0	5.105	35.136	247.9	4.967	4800.0	2.498	34.896	243.2	2.054
1600.0	4.689	35.066	254.5	4.551	4850.0	2.504	34.896	243.3	2.053
1650.0	4.242	34.996	261.6	4.105	4900.0	2.507	34.895	243.2	2.051
1700.0	4.168	34.992	262.1	4.028	4950.0	2.513	34.895	243.2	2.050
1750.0	4.220	35.009	261.0	4.074	5000.0	2.519	34.895	243.2	2.049
1800.0	4.238	35.021	259.5	4.087	5050.0	2.525	34.895	243.2	2.048
1850.0	4.034	34.989	262.4	3.880	5100.0	2.531	34.895	243.2	2.048
1900.0	3.951	34.982	263.2	3.794	5150.0	2.537	34.895	243.2	2.047
1950.0	3.841	34.971	264.2	3.681	5161.0	2.539	34.895	243.4	2.047
2000.0	3.660	34.947	267.3	3.497					
2050.0	3.662	34.956	266.2	3.494					
2100.0	3.602	34.956	266.2	3.430					
2150.0	3.500	34.944	267.0	3.325					
2200.0	3.392	34.936	268.2	3.215					
2250.0	3.371	34.942	267.0	3.189					
2300.0	3.337	34.944	265.7	3.151					
2350.0	3.300	34.946	264.7	3.110					
2400.0	3.265	34.949	263.3	3.070					
2450.0	3.225	34.951	261.8	3.026					
2500.0	3.213	34.959	258.0	3.009					
2550.0	3.173	34.958	257.5	2.965					
2600.0	3.136	34.961	254.9	2.924					
2650.0	3.100	34.960	254.1	2.883					
2700.0	3.029	34.955	253.1	2.809					
2750.0	2.989	34.953	252.4	2.764					
2800.0	2.959	34.952	251.1	2.729					
2850.0	2.936	34.951	250.4	2.702					
2900.0	2.889	34.947	249.5	2.651					
2950.0	2.855	34.945	248.3	2.612					
3000.0	2.817	34.942	247.8	2.570					

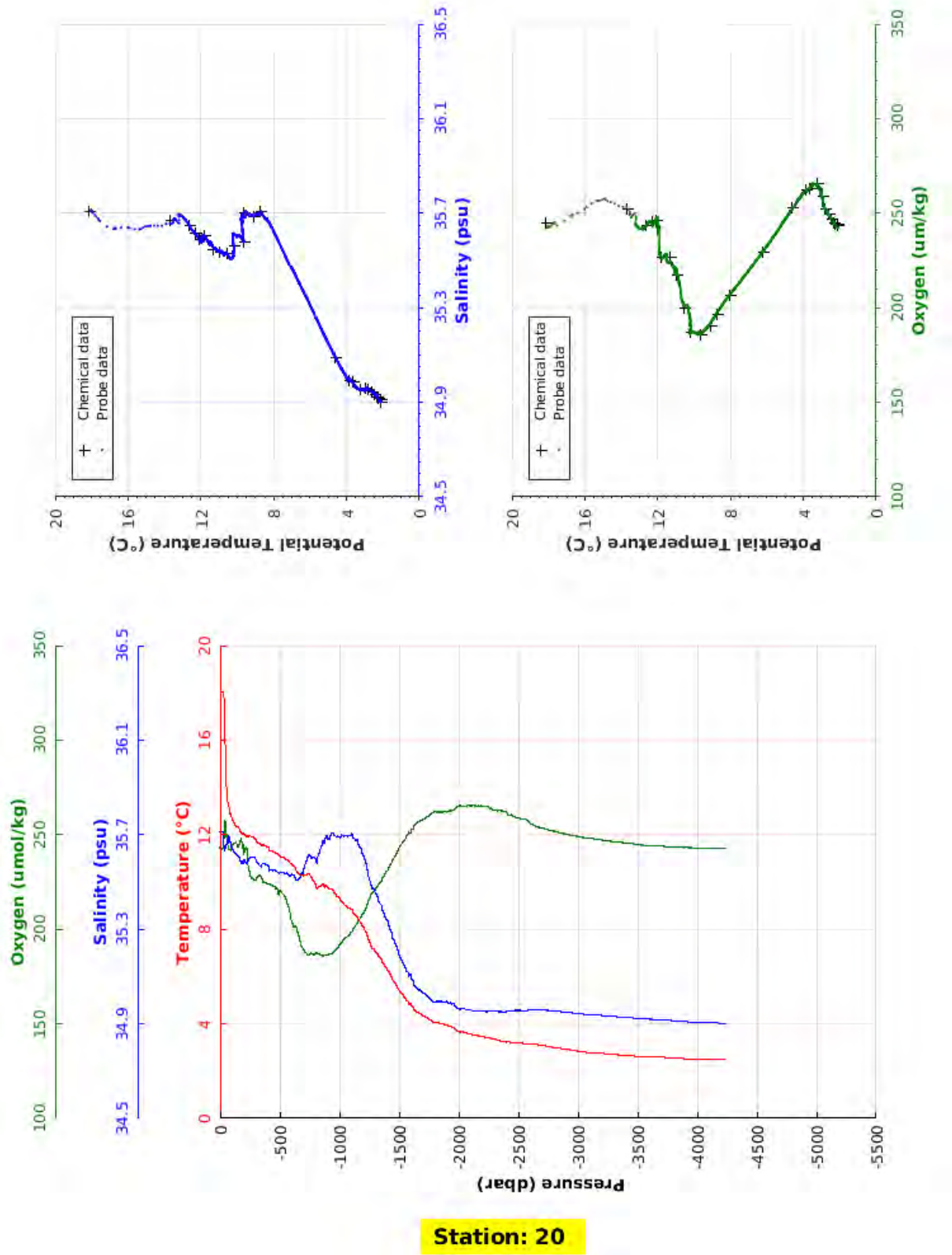




Station: 19

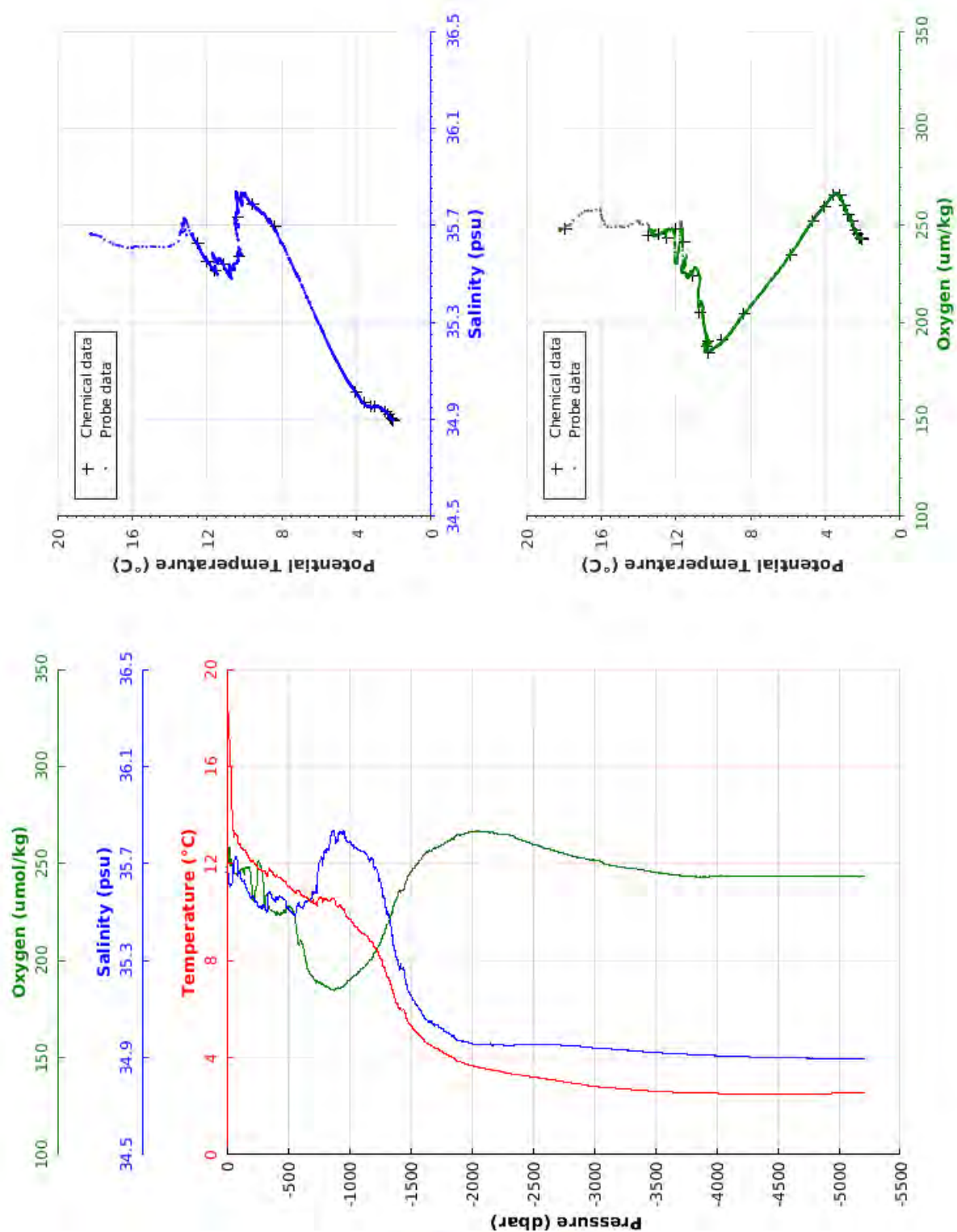
Cruise	: BOCATS 2016			
Station	: 20	Cast	: 1	
Date	: 27/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4190 m	Organism	: CSIC/IIM VIGO	
Position	: N 42 53.09 W 015 51.10			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.051	35.711	243.2	18.051	3050.0	2.811	34.941	248.5	2.559
10.0	18.046	35.712	242.9	18.044	3100.0	2.786	34.939	248.0	2.529
20.0	18.029	35.711	242.6	18.025	3150.0	2.765	34.937	247.7	2.504
30.0	17.946	35.701	242.7	17.941	3200.0	2.751	34.935	247.3	2.485
40.0	16.380	35.638	250.1	16.374	3250.0	2.726	34.933	246.7	2.455
50.0	14.759	35.648	256.3	14.751	3300.0	2.705	34.931	246.3	2.429
100.0	12.655	35.649	243.0	12.641	3350.0	2.687	34.929	246.0	2.406
150.0	12.305	35.611	244.3	12.285	3400.0	2.665	34.927	245.6	2.379
200.0	12.016	35.585	241.5	11.989	3450.0	2.654	34.925	245.2	2.364
250.0	11.947	35.601	231.0	11.914	3500.0	2.631	34.923	244.7	2.335
300.0	11.788	35.598	225.9	11.749	3550.0	2.613	34.921	244.4	2.312
350.0	11.532	35.565	227.9	11.487	3600.0	2.603	34.919	244.2	2.297
400.0	11.478	35.571	224.0	11.427	3650.0	2.595	34.918	244.0	2.284
450.0	11.285	35.553	223.0	11.227	3700.0	2.590	34.917	244.0	2.273
500.0	11.089	35.538	218.2	11.026	3750.0	2.570	34.915	243.7	2.248
550.0	10.963	35.536	216.9	10.894	3800.0	2.555	34.913	243.4	2.228
600.0	10.780	35.529	205.5	10.706	3850.0	2.540	34.911	243.4	2.208
650.0	10.395	35.508	199.4	10.315	3900.0	2.524	34.909	243.2	2.187
700.0	10.272	35.549	189.5	10.187	3950.0	2.513	34.907	243.1	2.170
750.0	10.316	35.614	186.6	10.224	4000.0	2.507	34.906	243.0	2.158
800.0	9.915	35.603	186.8	9.819	4050.0	2.502	34.905	243.0	2.148
850.0	9.856	35.653	186.2	9.754	4100.0	2.496	34.904	242.9	2.137
900.0	9.815	35.692	186.1	9.707	4150.0	2.496	34.904	242.8	2.131
950.0	9.623	35.705	187.4	9.510	4200.0	2.494	34.903	242.8	2.123
1000.0	9.310	35.693	190.5	9.194	4250.0	2.492	34.902	243.0	2.114
1050.0	9.006	35.695	195.0	8.885	4254.0	2.492	34.902	242.9	2.114
1100.0	8.824	35.700	198.3	8.698					
1150.0	8.526	35.677	202.5	8.397					
1200.0	8.085	35.614	208.0	7.954					
1250.0	7.485	35.517	215.4	7.354					
1300.0	7.067	35.458	220.6	6.934					
1350.0	6.740	35.406	224.9	6.605					
1400.0	6.297	35.337	230.7	6.161					
1450.0	5.820	35.259	237.0	5.684					
1500.0	5.404	35.190	242.6	5.268					
1550.0	5.128	35.147	247.0	4.990					
1600.0	4.858	35.108	250.9	4.718					
1650.0	4.501	35.052	256.0	4.361					
1700.0	4.347	35.033	258.0	4.203					
1750.0	4.209	35.013	259.9	4.063					
1800.0	4.058	34.993	262.0	3.909					
1850.0	4.009	34.994	262.0	3.856					
1900.0	3.962	34.996	261.9	3.805					
1950.0	3.867	34.989	262.6	3.707					
2000.0	3.692	34.967	264.9	3.529					
2050.0	3.642	34.964	265.0	3.475					
2100.0	3.564	34.959	265.2	3.393					
2150.0	3.513	34.956	265.3	3.338					
2200.0	3.457	34.954	265.1	3.279					
2250.0	3.403	34.953	264.6	3.221					
2300.0	3.342	34.955	263.1	3.156					
2350.0	3.279	34.952	262.9	3.089					
2400.0	3.225	34.950	262.3	3.031					
2450.0	3.217	34.954	260.5	3.018					
2500.0	3.194	34.957	258.8	2.990					
2550.0	3.147	34.954	258.1	2.940					
2600.0	3.155	34.961	255.9	2.943					
2650.0	3.128	34.960	254.5	2.910					
2700.0	3.090	34.959	253.5	2.869					
2750.0	3.049	34.957	252.6	2.823					
2800.0	2.993	34.953	252.0	2.763					
2850.0	2.961	34.952	251.0	2.726					
2900.0	2.927	34.950	250.4	2.688					
2950.0	2.884	34.947	249.7	2.641					
3000.0	2.849	34.944	249.2	2.601					



Cruise	: BOCATS 2016			
Station	: 21	Cast	: 1	
Date	: 27/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 5124 m	Organism	: CSIC/IIM VIGO	
Position	: N 43 10.98 W 016 14.68			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.210	35.666	248.3	18.210	3050.0	2.790	34.938	251.2	2.538
10.0	18.214	35.665	247.4	18.212	3100.0	2.771	34.937	249.6	2.515
20.0	17.481	35.642	252.7	17.478	3150.0	2.750	34.935	248.8	2.489
30.0	16.021	35.608	255.5	16.017	3200.0	2.731	34.934	248.4	2.466
40.0	14.784	35.611	248.8	14.778	3250.0	2.707	34.931	247.9	2.437
50.0	13.450	35.669	249.0	13.443	3300.0	2.689	34.929	247.7	2.414
100.0	12.801	35.659	245.9	12.787	3350.0	2.671	34.927	247.3	2.390
150.0	12.522	35.623	246.3	12.502	3400.0	2.647	34.925	246.6	2.362
200.0	12.092	35.557	245.0	12.065	3450.0	2.630	34.923	246.2	2.340
250.0	11.878	35.538	237.8	11.845	3500.0	2.619	34.922	245.4	2.323
300.0	11.694	35.525	241.8	11.655	3550.0	2.604	34.920	245.1	2.303
350.0	11.740	35.581	227.3	11.695	3600.0	2.592	34.918	244.6	2.287
400.0	11.462	35.542	224.7	11.411	3650.0	2.580	34.917	244.3	2.269
450.0	11.356	35.561	224.2	11.298	3700.0	2.571	34.915	243.8	2.255
500.0	11.066	35.518	228.1	11.003	3750.0	2.565	34.914	243.6	2.243
550.0	10.840	35.489	224.7	10.771	3800.0	2.557	34.913	243.3	2.230
600.0	10.787	35.524	209.2	10.712	3850.0	2.551	34.912	243.1	2.219
650.0	10.610	35.543	200.7	10.530	3900.0	2.546	34.911	243.2	2.208
700.0	10.473	35.578	192.3	10.386	3950.0	2.536	34.910	243.2	2.192
750.0	10.539	35.682	189.4	10.446	4000.0	2.528	34.909	243.6	2.179
800.0	10.564	35.750	187.0	10.464	4050.0	2.521	34.907	243.6	2.166
850.0	10.526	35.811	185.5	10.420	4100.0	2.516	34.906	243.6	2.156
900.0	10.221	35.786	185.9	10.111	4150.0	2.511	34.905	243.6	2.145
950.0	10.127	35.823	186.3	10.011	4200.0	2.509	34.904	243.7	2.137
1000.0	9.711	35.790	189.5	9.591	4250.0	2.507	34.903	243.7	2.129
1050.0	9.406	35.767	192.4	9.282	4300.0	2.505	34.903	243.5	2.122
1100.0	9.150	35.749	195.5	9.022	4350.0	2.501	34.902	243.5	2.112
1150.0	8.965	35.733	198.0	8.832	4400.0	2.501	34.901	243.6	2.106
1200.0	8.617	35.696	202.7	8.481	4450.0	2.501	34.901	243.5	2.099
1250.0	8.206	35.637	207.8	8.068	4500.0	2.501	34.900	243.5	2.094
1300.0	7.486	35.520	216.1	7.349	4550.0	2.501	34.899	243.5	2.088
1350.0	6.789	35.402	224.9	6.653	4600.0	2.504	34.899	243.5	2.084
1400.0	6.184	35.300	232.7	6.050	4650.0	2.506	34.899	243.4	2.080
1450.0	5.937	35.261	236.5	5.799	4700.0	2.508	34.898	243.4	2.076
1500.0	5.324	35.160	245.1	5.188	4750.0	2.512	34.898	243.3	2.074
1550.0	5.042	35.119	249.1	4.905	4800.0	2.516	34.898	243.4	2.071
1600.0	4.772	35.080	253.1	4.633	4850.0	2.519	34.897	243.3	2.068
1650.0	4.536	35.048	256.4	4.396	4900.0	2.523	34.897	243.4	2.066
1700.0	4.379	35.033	258.0	4.235	4950.0	2.528	34.897	243.3	2.064
1750.0	4.288	35.024	259.0	4.141	5000.0	2.532	34.897	243.3	2.061
1800.0	4.136	35.005	261.0	3.986	5050.0	2.536	34.896	243.3	2.059
1850.0	3.998	34.992	262.6	3.845	5100.0	2.542	34.896	243.3	2.058
1900.0	3.843	34.973	264.7	3.687	5150.0	2.548	34.896	243.2	2.058
1950.0	3.752	34.965	265.5	3.593	5200.0	2.554	34.896	243.2	2.057
2000.0	3.678	34.957	266.4	3.515	5216.0	2.556	34.896	243.4	2.057
2050.0	3.608	34.954	266.7	3.442					
2100.0	3.562	34.954	266.5	3.391					
2150.0	3.525	34.955	266.1	3.350					
2200.0	3.468	34.954	265.6	3.289					
2250.0	3.430	34.955	264.9	3.247					
2300.0	3.348	34.949	265.0	3.161					
2350.0	3.318	34.952	263.7	3.127					
2400.0	3.284	34.954	262.2	3.089					
2450.0	3.244	34.955	261.2	3.045					
2500.0	3.204	34.955	260.0	3.000					
2550.0	3.170	34.955	259.2	2.962					
2600.0	3.127	34.955	257.8	2.914					
2650.0	3.092	34.954	257.1	2.876					
2700.0	3.047	34.953	256.2	2.826					
2750.0	3.007	34.951	255.3	2.782					
2800.0	2.964	34.949	254.3	2.734					
2850.0	2.936	34.948	253.5	2.702					
2900.0	2.897	34.945	252.8	2.658					
2950.0	2.850	34.942	252.4	2.607					
3000.0	2.818	34.940	251.8	2.571					

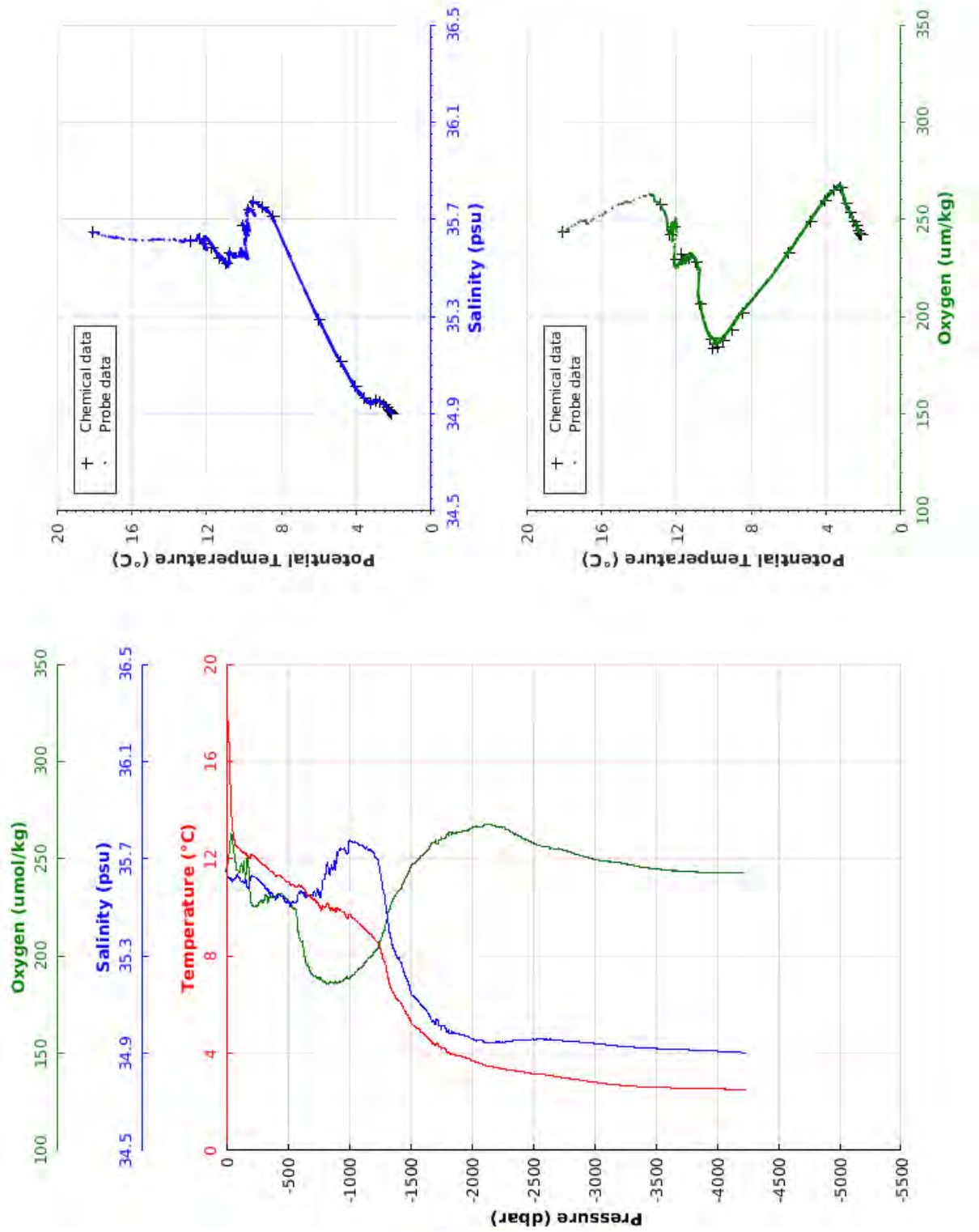


**Station: 21**



Cruise	: BOCATS 2016			
Station	: 22	Cast	: 1	
Date	: 28/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4172 m	Organism	: CSIC/IIM VIGO	
Position	: N 43 28.67 W 016 38.13			

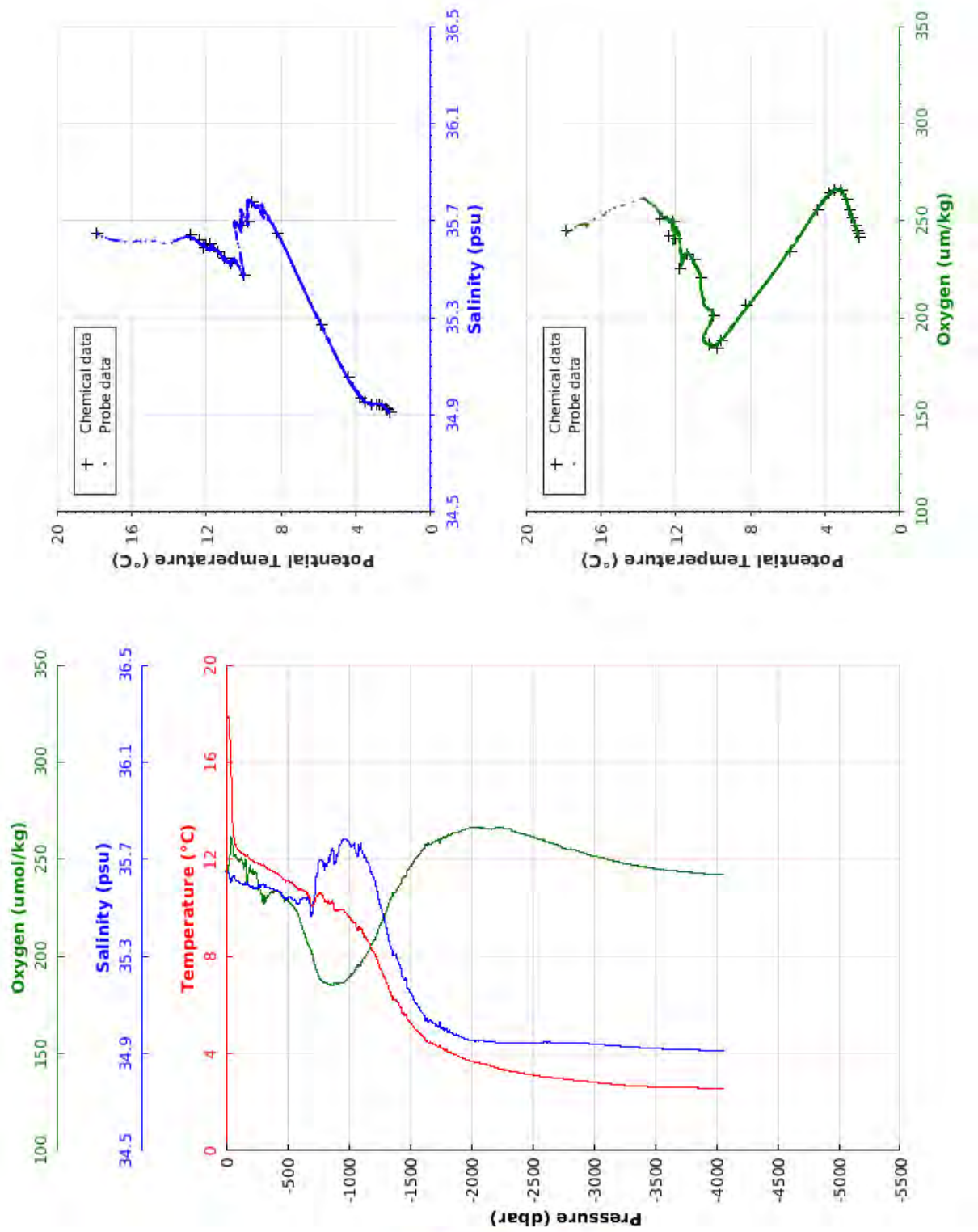
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.102	35.646	244.1	18.102	3050.0	2.781	34.938	249.0	2.529
10.0	17.767	35.642	245.1	17.766	3100.0	2.743	34.935	248.6	2.487
20.0	16.831	35.626	248.8	16.828	3150.0	2.717	34.932	248.4	2.457
30.0	15.428	35.615	255.7	15.423	3200.0	2.690	34.929	248.2	2.425
40.0	13.978	35.615	261.0	13.972	3250.0	2.667	34.927	247.4	2.397
50.0	13.203	35.610	261.5	13.196	3300.0	2.652	34.926	246.7	2.378
100.0	12.441	35.627	243.9	12.428	3350.0	2.633	34.924	246.1	2.354
150.0	12.205	35.599	248.1	12.185	3400.0	2.621	34.922	245.6	2.336
200.0	12.165	35.626	230.1	12.138	3450.0	2.610	34.921	245.2	2.320
250.0	11.966	35.619	225.9	11.933	3500.0	2.600	34.920	244.7	2.305
300.0	11.754	35.595	227.5	11.715	3550.0	2.593	34.919	244.4	2.292
350.0	11.528	35.563	228.4	11.483	3600.0	2.583	34.917	244.1	2.277
400.0	11.297	35.533	230.1	11.246	3650.0	2.579	34.916	243.9	2.268
450.0	11.258	35.544	232.1	11.200	3700.0	2.572	34.915	243.6	2.256
500.0	11.049	35.522	229.3	10.986	3750.0	2.567	34.914	243.4	2.246
550.0	10.907	35.523	224.4	10.838	3800.0	2.562	34.913	243.3	2.235
600.0	10.895	35.562	209.2	10.820	3850.0	2.554	34.912	243.1	2.222
650.0	10.574	35.544	197.1	10.493	3900.0	2.545	34.911	243.0	2.207
700.0	10.357	35.549	191.2	10.271	3950.0	2.541	34.910	242.9	2.197
750.0	10.164	35.570	188.6	10.073	4000.0	2.535	34.909	242.9	2.185
800.0	9.994	35.617	186.7	9.898	4050.0	2.528	34.908	242.9	2.173
850.0	9.873	35.634	186.8	9.772	4100.0	2.521	34.906	243.0	2.161
900.0	9.990	35.724	186.0	9.881	4150.0	2.514	34.905	242.8	2.148
950.0	9.816	35.741	187.1	9.702	4200.0	2.501	34.903	242.9	2.130
1000.0	9.722	35.772	188.3	9.602	4235.0	2.494	34.902	242.8	2.119
1050.0	9.496	35.769	190.9	9.371					
1100.0	9.258	35.756	194.0	9.129					
1150.0	9.002	35.745	197.4	8.869					
1200.0	8.769	35.725	200.9	8.632					
1250.0	8.355	35.662	205.8	8.215					
1300.0	7.494	35.512	215.6	7.357					
1350.0	6.625	35.366	226.5	6.491					
1400.0	6.184	35.292	232.7	6.050					
1450.0	5.789	35.232	238.1	5.654					
1500.0	5.329	35.161	244.6	5.194					
1550.0	5.045	35.121	248.7	4.908					
1600.0	4.831	35.093	251.8	4.692					
1650.0	4.618	35.063	254.9	4.476					
1700.0	4.366	35.025	258.5	4.223					
1750.0	4.232	35.011	259.8	4.085					
1800.0	4.052	34.989	262.3	3.903					
1850.0	3.958	34.985	263.1	3.806					
1900.0	3.883	34.978	263.7	3.727					
1950.0	3.814	34.972	264.2	3.654					
2000.0	3.705	34.960	265.7	3.542					
2050.0	3.610	34.954	266.4	3.443					
2100.0	3.520	34.948	266.9	3.350					
2150.0	3.452	34.942	267.9	3.278					
2200.0	3.426	34.946	266.9	3.248					
2250.0	3.375	34.946	266.3	3.192					
2300.0	3.314	34.948	264.8	3.128					
2350.0	3.293	34.953	262.6	3.103					
2400.0	3.251	34.954	261.6	3.056					
2450.0	3.200	34.956	259.7	3.001					
2500.0	3.169	34.957	258.1	2.966					
2550.0	3.139	34.958	256.8	2.931					
2600.0	3.118	34.956	256.5	2.906					
2650.0	3.079	34.956	255.3	2.862					
2700.0	3.032	34.952	255.1	2.812					
2750.0	2.989	34.951	254.4	2.765					
2800.0	2.958	34.950	253.5	2.729					
2850.0	2.922	34.948	252.5	2.688					
2900.0	2.882	34.946	251.5	2.644					
2950.0	2.840	34.943	250.7	2.598					
3000.0	2.809	34.941	249.7	2.563					



Station: 22

Cruise	: BOCATS 2016			
Station	: 23	Cast	: 1	
Date	: 28/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4008 m	Organism	: CSIC/IIM VIGO	
Position	: N 43 46.46			
	W 017 1.74			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.857	35.647	244.4	17.856	3050.0	2.788	34.937	250.9	2.537
10.0	17.857	35.647	244.6	17.855	3100.0	2.762	34.935	250.3	2.506
20.0	17.849	35.647	244.6	17.845	3150.0	2.738	34.933	249.3	2.478
30.0	17.034	35.620	247.9	17.029	3200.0	2.713	34.931	248.6	2.448
40.0	15.799	35.615	253.1	15.792	3250.0	2.691	34.929	247.8	2.420
50.0	13.638	35.617	261.0	13.631	3300.0	2.675	34.927	247.3	2.400
100.0	12.374	35.608	249.7	12.360	3350.0	2.658	34.926	246.7	2.378
150.0	12.184	35.600	246.5	12.164	3400.0	2.643	34.924	246.1	2.358
200.0	11.976	35.583	246.4	11.950	3450.0	2.632	34.923	245.6	2.341
250.0	11.836	35.580	243.0	11.803	3500.0	2.620	34.921	245.0	2.324
300.0	11.758	35.594	230.1	11.719	3550.0	2.609	34.920	244.6	2.308
350.0	11.581	35.583	230.7	11.536	3600.0	2.600	34.918	244.2	2.295
400.0	11.438	35.572	233.2	11.387	3650.0	2.595	34.917	243.9	2.283
450.0	11.275	35.560	232.4	11.217	3700.0	2.590	34.917	243.7	2.273
500.0	11.088	35.540	228.9	11.024	3750.0	2.587	34.916	243.4	2.265
550.0	10.933	35.529	226.1	10.864	3800.0	2.584	34.915	243.1	2.257
600.0	10.747	35.522	220.5	10.673	3850.0	2.580	34.914	242.9	2.247
650.0	10.660	35.541	211.3	10.579	3900.0	2.580	34.914	242.5	2.241
700.0	10.082	35.475	202.6	9.998	3950.0	2.578	34.913	242.1	2.233
750.0	10.505	35.649	192.0	10.412	4000.0	2.579	34.912	242.0	2.228
800.0	10.317	35.668	186.5	10.219	4050.0	2.576	34.912	242.2	2.220
850.0	10.160	35.692	185.7	10.057	4067.0	2.574	34.911	242.3	2.216
900.0	9.921	35.710	186.0	9.813					
950.0	9.905	35.777	186.3	9.790					
1000.0	9.667	35.773	189.0	9.548					
1050.0	9.403	35.763	191.8	9.279					
1100.0	9.152	35.759	195.5	9.024					
1150.0	8.658	35.691	201.3	8.528					
1200.0	8.201	35.630	207.0	8.069					
1250.0	7.594	35.530	214.3	7.461					
1300.0	7.033	35.436	221.4	6.900					
1350.0	6.398	35.331	230.1	6.267					
1400.0	6.113	35.291	234.0	5.979					
1450.0	5.628	35.210	240.6	5.494					
1500.0	5.289	35.156	245.6	5.154					
1550.0	4.961	35.106	250.3	4.825					
1600.0	4.720	35.069	254.1	4.581					
1650.0	4.447	35.032	257.7	4.308					
1700.0	4.362	35.023	258.8	4.219					
1750.0	4.314	35.023	258.6	4.166					
1800.0	4.156	35.002	261.2	4.005					
1850.0	3.998	34.983	263.0	3.845					
1900.0	3.879	34.972	264.0	3.723					
1950.0	3.770	34.962	265.3	3.611					
2000.0	3.678	34.953	266.4	3.515					
2050.0	3.620	34.952	266.3	3.453					
2100.0	3.569	34.952	265.9	3.398					
2150.0	3.501	34.950	265.5	3.326					
2200.0	3.421	34.945	265.8	3.243					
2250.0	3.346	34.942	266.4	3.164					
2300.0	3.299	34.943	265.6	3.113					
2350.0	3.251	34.946	264.1	3.061					
2400.0	3.205	34.946	263.4	3.011					
2450.0	3.155	34.946	262.5	2.957					
2500.0	3.121	34.945	261.8	2.919					
2550.0	3.069	34.946	260.5	2.862					
2600.0	3.049	34.947	259.4	2.838					
2650.0	3.014	34.946	258.4	2.799					
2700.0	2.986	34.946	257.6	2.766					
2750.0	2.958	34.946	255.8	2.734					
2800.0	2.917	34.944	255.1	2.689					
2850.0	2.893	34.943	254.7	2.660					
2900.0	2.871	34.942	253.6	2.633					
2950.0	2.851	34.941	252.3	2.608					
3000.0	2.819	34.939	251.6	2.572					

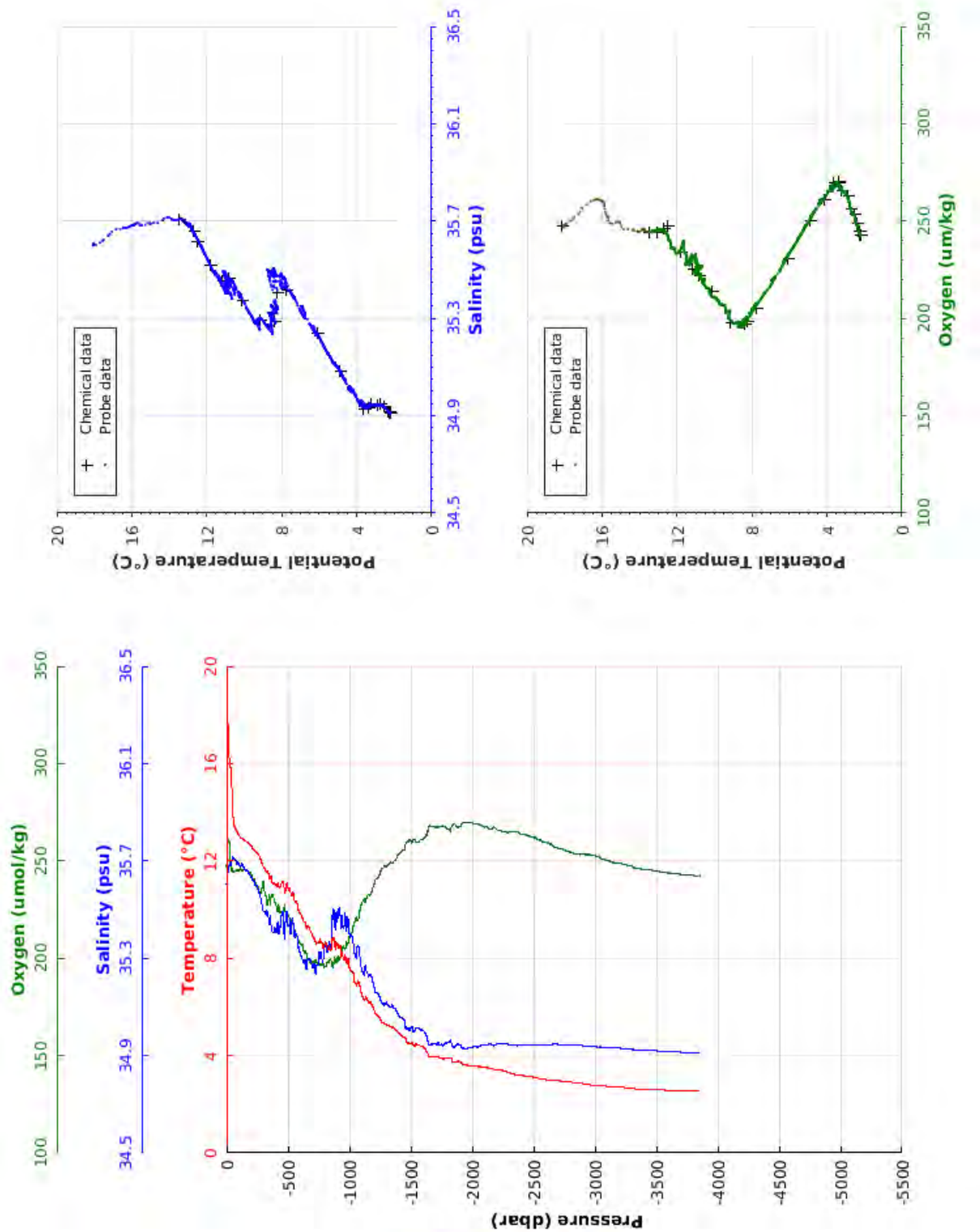


Station: 23

Cruise	: BOCATS 2016			
Station	: 24	Cast	: 1	
Date	: 28/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3791 m	Organism	: CSIC/IIM VIGO	
Position	: N 44 4.55			
	W 017 25.52			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.030	35.605	247.5	18.030	3050.0	2.765	34.936	251.3	2.514
10.0	17.700	35.611	250.1	17.699	3100.0	2.741	34.934	250.4	2.485
20.0	16.344	35.672	260.9	16.340	3150.0	2.729	34.933	249.2	2.469
30.0	15.877	35.684	257.8	15.872	3200.0	2.704	34.930	248.6	2.439
40.0	15.136	35.692	249.5	15.130	3250.0	2.678	34.928	248.0	2.408
50.0	14.000	35.715	244.5	13.993	3300.0	2.646	34.925	247.3	2.372
100.0	13.051	35.685	245.1	13.037	3350.0	2.630	34.923	246.2	2.350
150.0	12.827	35.670	245.6	12.806	3400.0	2.621	34.922	245.6	2.336
200.0	12.604	35.636	244.0	12.577	3450.0	2.611	34.921	245.3	2.321
250.0	12.348	35.599	236.9	12.315	3500.0	2.602	34.919	244.7	2.307
300.0	11.712	35.496	239.3	11.673	3550.0	2.590	34.918	244.4	2.290
350.0	11.276	35.439	232.5	11.232	3600.0	2.576	34.916	243.8	2.271
400.0	10.995	35.405	228.8	10.945	3650.0	2.566	34.915	243.4	2.255
450.0	11.110	35.475	223.5	11.053	3700.0	2.560	34.914	243.1	2.244
500.0	10.909	35.452	222.9	10.846	3750.0	2.557	34.913	242.8	2.235
550.0	10.536	35.428	216.1	10.469	3800.0	2.554	34.912	242.6	2.227
600.0	9.823	35.326	207.9	9.753	3850.0	2.555	34.912	242.3	2.223
650.0	9.270	35.257	203.8	9.196	3857.0	2.556	34.912	242.5	2.223
700.0	8.883	35.269	198.0	8.805					
750.0	8.642	35.276	197.4	8.560					
800.0	8.657	35.354	195.7	8.569					
850.0	8.361	35.350	199.2	8.268					
900.0	8.609	35.487	197.7	8.509					
950.0	7.965	35.430	205.0	7.864					
1000.0	7.612	35.405	210.2	7.508					
1050.0	6.989	35.315	218.9	6.884					
1100.0	6.490	35.259	227.1	6.384					
1150.0	6.277	35.243	230.9	6.168					
1200.0	5.879	35.186	237.2	5.768					
1250.0	5.513	35.139	243.1	5.401					
1300.0	5.306	35.117	247.0	5.190					
1350.0	5.189	35.107	248.8	5.070					
1400.0	4.920	35.068	252.8	4.799					
1450.0	4.748	35.046	255.7	4.624					
1500.0	4.471	35.004	260.7	4.346					
1550.0	4.457	35.014	259.6	4.327					
1600.0	4.354	35.005	260.8	4.220					
1650.0	3.965	34.944	267.3	3.831					
1700.0	3.952	34.948	267.3	3.814					
1750.0	3.894	34.945	267.8	3.752					
1800.0	3.898	34.956	266.3	3.752					
1850.0	3.738	34.936	268.5	3.589					
1900.0	3.737	34.945	267.6	3.583					
1950.0	3.604	34.930	270.0	3.447					
2000.0	3.580	34.933	269.6	3.419					
2050.0	3.551	34.936	269.1	3.386					
2100.0	3.522	34.944	267.4	3.352					
2150.0	3.486	34.948	266.4	3.312					
2200.0	3.421	34.946	266.2	3.243					
2250.0	3.382	34.948	265.2	3.200					
2300.0	3.309	34.946	264.6	3.123					
2350.0	3.227	34.941	265.2	3.037					
2400.0	3.184	34.943	263.8	2.991					
2450.0	3.137	34.943	263.3	2.939					
2500.0	3.112	34.944	262.2	2.910					
2550.0	3.054	34.944	261.0	2.848					
2600.0	3.010	34.944	259.3	2.800					
2650.0	2.995	34.945	258.4	2.780					
2700.0	2.968	34.946	256.7	2.749					
2750.0	2.943	34.945	255.9	2.719					
2800.0	2.907	34.944	254.6	2.679					
2850.0	2.871	34.943	253.6	2.638					
2900.0	2.852	34.941	253.4	2.615					
2950.0	2.807	34.938	253.1	2.566					
3000.0	2.777	34.936	252.8	2.531					

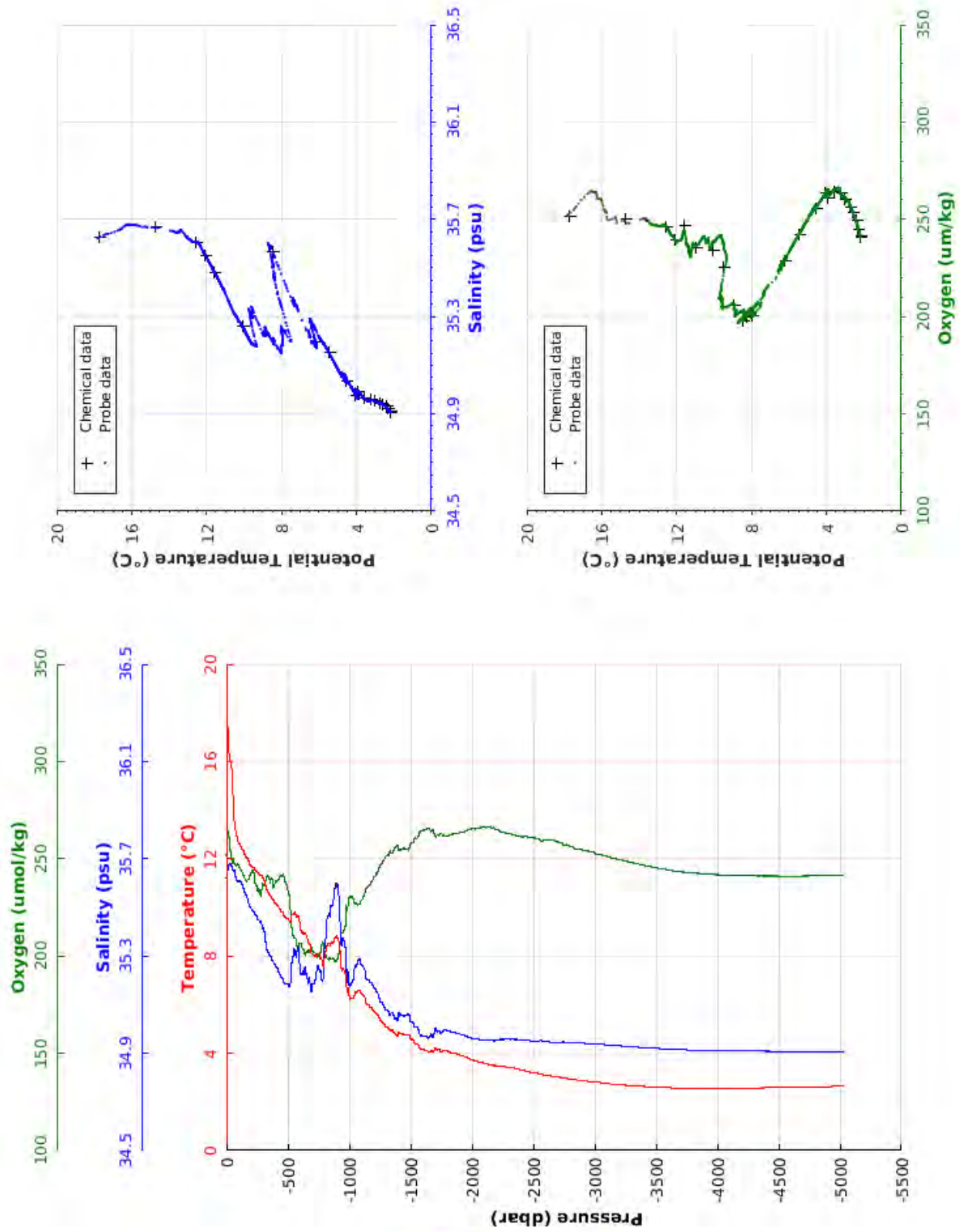




Station: 24

Cruise	: BOCATS 2016			
Station	: 25	Cast	: 1	
Date	: 28/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4951 m	Organism	: CSIC/IIM VIGO	
Position	: N 44 22.70 W 017 49.06			

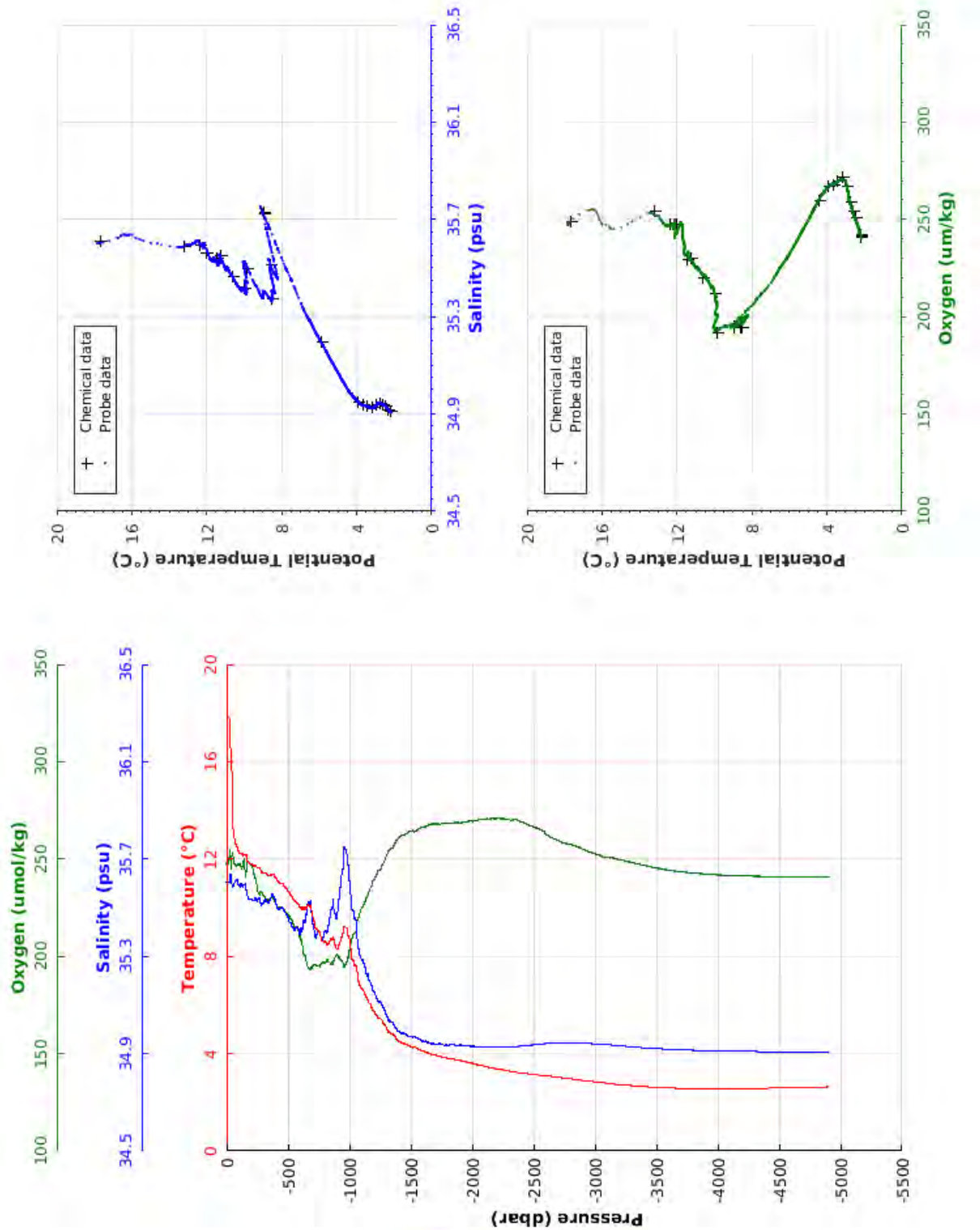
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.794	35.623	252.1	17.794	3050.0	2.798	34.937	252.1	2.546
10.0	17.424	35.637	255.9	17.422	3100.0	2.764	34.935	251.2	2.508
20.0	16.409	35.670	264.0	16.406	3150.0	2.730	34.932	250.3	2.469
30.0	16.057	35.677	260.6	16.052	3200.0	2.705	34.930	249.6	2.440
40.0	15.779	35.677	253.8	15.773	3250.0	2.689	34.929	248.8	2.419
50.0	14.952	35.665	249.1	14.944	3300.0	2.674	34.927	248.3	2.398
100.0	12.669	35.607	247.0	12.655	3350.0	2.652	34.925	247.4	2.372
150.0	12.184	35.564	240.8	12.164	3400.0	2.634	34.923	246.6	2.349
200.0	11.716	35.498	241.8	11.690	3450.0	2.621	34.922	245.9	2.331
250.0	11.475	35.463	236.3	11.443	3500.0	2.608	34.920	245.4	2.313
300.0	11.168	35.415	237.6	11.131	3550.0	2.592	34.918	244.7	2.291
350.0	10.538	35.308	240.2	10.495	3600.0	2.586	34.917	244.1	2.280
400.0	10.157	35.262	237.3	10.110	3650.0	2.575	34.916	243.7	2.264
450.0	9.817	35.212	241.3	9.765	3700.0	2.566	34.915	243.4	2.250
500.0	9.518	35.183	235.2	9.461	3750.0	2.564	34.914	243.0	2.242
550.0	9.713	35.301	210.9	9.649	3800.0	2.564	34.913	242.8	2.236
600.0	9.184	35.250	206.2	9.116	3850.0	2.561	34.913	242.5	2.228
650.0	8.795	35.229	201.6	8.724	3900.0	2.561	34.912	242.3	2.222
700.0	8.088	35.175	203.5	8.014	3950.0	2.560	34.911	242.0	2.216
750.0	8.098	35.258	199.7	8.019	4000.0	2.559	34.911	241.8	2.209
800.0	8.044	35.327	203.4	7.959	4050.0	2.559	34.910	241.7	2.204
850.0	8.495	35.479	199.0	8.402	4100.0	2.564	34.910	241.5	2.202
900.0	8.769	35.594	197.5	8.668	4150.0	2.567	34.910	241.6	2.200
950.0	7.495	35.372	211.7	7.397	4200.0	2.570	34.910	241.5	2.196
1000.0	6.321	35.181	228.7	6.227	4250.0	2.573	34.909	241.3	2.193
1050.0	6.504	35.256	227.3	6.403	4300.0	2.576	34.909	241.3	2.190
1100.0	6.445	35.267	228.2	6.339	4350.0	2.580	34.909	241.1	2.189
1150.0	5.998	35.203	235.4	5.891	4400.0	2.583	34.909	241.1	2.185
1200.0	5.736	35.173	239.6	5.626	4450.0	2.587	34.908	241.1	2.183
1250.0	5.386	35.123	245.6	5.275	4500.0	2.591	34.908	241.1	2.181
1300.0	5.066	35.077	250.9	4.953	4550.0	2.596	34.908	241.0	2.179
1350.0	4.962	35.069	252.7	4.845	4600.0	2.599	34.908	241.0	2.176
1400.0	4.769	35.046	256.6	4.650	4650.0	2.604	34.908	241.0	2.176
1450.0	4.742	35.052	255.5	4.618	4700.0	2.609	34.908	241.0	2.174
1500.0	4.596	35.033	257.0	4.469	4750.0	2.613	34.907	241.3	2.172
1550.0	4.399	35.009	260.4	4.269	4800.0	2.619	34.907	241.2	2.171
1600.0	4.146	34.971	264.6	4.015	4850.0	2.624	34.907	241.2	2.170
1650.0	4.068	34.964	265.4	3.933	4900.0	2.630	34.907	241.3	2.169
1700.0	4.203	35.000	261.8	4.061	4950.0	2.637	34.907	241.4	2.169
1750.0	4.076	34.983	262.9	3.931	5000.0	2.643	34.907	241.4	2.169
1800.0	4.086	34.994	261.8	3.937	5035.0	2.648	34.907	241.5	2.170
1850.0	3.998	34.986	262.9	3.845					
1900.0	3.926	34.980	263.2	3.769					
1950.0	3.848	34.972	264.2	3.688					
2000.0	3.743	34.962	265.3	3.579					
2050.0	3.651	34.958	265.8	3.484					
2100.0	3.589	34.955	266.0	3.418					
2150.0	3.536	34.952	266.2	3.361					
2200.0	3.496	34.956	264.9	3.317					
2250.0	3.450	34.957	263.8	3.267					
2300.0	3.423	34.958	263.0	3.236					
2350.0	3.380	34.957	262.2	3.188					
2400.0	3.319	34.955	261.4	3.123					
2450.0	3.250	34.952	261.4	3.051					
2500.0	3.198	34.951	260.7	2.994					
2550.0	3.171	34.951	260.0	2.963					
2600.0	3.106	34.949	259.4	2.894					
2650.0	3.055	34.946	259.7	2.839					
2700.0	3.015	34.945	258.8	2.795					
2750.0	2.978	34.946	257.1	2.753					
2800.0	2.951	34.945	256.4	2.722					
2850.0	2.905	34.944	254.9	2.672					
2900.0	2.880	34.942	254.5	2.642					
2950.0	2.846	34.940	254.0	2.603					
3000.0	2.817	34.939	253.0	2.570					



Station: 25

Cruise	: BOCATS 2016			
Station	: 26	Cast	: 1	
Date	: 29/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4823 m	Organism	: CSIC/IIM VIGO	
Position	: N 44 40.43 W 018 12.64			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.832	35.604	248.1	17.832	3050.0	2.809	34.938	251.9	2.557
10.0	17.829	35.604	247.6	17.827	3100.0	2.784	34.936	250.7	2.527
20.0	17.814	35.604	247.9	17.811	3150.0	2.759	34.934	250.6	2.498
30.0	16.737	35.624	254.7	16.733	3200.0	2.729	34.932	249.7	2.464
40.0	16.005	35.637	247.5	15.999	3250.0	2.706	34.930	249.0	2.436
50.0	13.464	35.587	253.3	13.457	3300.0	2.684	34.928	248.1	2.408
100.0	12.294	35.593	247.4	12.281	3350.0	2.664	34.926	247.6	2.384
150.0	12.150	35.593	249.7	12.130	3400.0	2.644	34.924	246.8	2.359
200.0	11.784	35.534	247.3	11.758	3450.0	2.629	34.922	246.0	2.339
250.0	11.644	35.529	237.1	11.612	3500.0	2.613	34.921	245.4	2.318
300.0	11.441	35.518	232.4	11.403	3550.0	2.599	34.919	244.8	2.299
350.0	11.317	35.523	229.3	11.272	3600.0	2.592	34.918	244.4	2.286
400.0	11.221	35.528	228.2	11.171	3650.0	2.582	34.917	243.8	2.271
450.0	10.987	35.497	225.5	10.931	3700.0	2.576	34.916	243.4	2.259
500.0	10.691	35.466	221.5	10.629	3750.0	2.573	34.915	243.2	2.251
550.0	10.278	35.411	216.2	10.212	3800.0	2.568	34.914	242.8	2.241
600.0	9.970	35.394	210.2	9.899	3850.0	2.565	34.913	242.5	2.232
650.0	9.949	35.462	198.5	9.872	3900.0	2.563	34.912	242.3	2.225
700.0	9.784	35.480	193.7	9.701	3950.0	2.562	34.912	242.1	2.218
750.0	9.063	35.402	195.0	8.978	4000.0	2.560	34.911	241.8	2.210
800.0	8.630	35.401	196.5	8.542	4050.0	2.561	34.910	241.7	2.205
850.0	8.690	35.478	196.3	8.596	4100.0	2.563	34.910	241.5	2.201
900.0	8.317	35.456	200.6	8.219	4150.0	2.565	34.910	241.6	2.197
950.0	8.929	35.660	197.3	8.821	4200.0	2.568	34.910	241.3	2.195
1000.0	8.632	35.638	201.0	8.520	4250.0	2.570	34.909	241.3	2.191
1050.0	7.633	35.457	211.8	7.523	4300.0	2.573	34.909	241.1	2.187
1100.0	6.670	35.289	224.3	6.563	4350.0	2.575	34.908	241.1	2.184
1150.0	6.210	35.223	231.1	6.101	4400.0	2.579	34.908	240.9	2.182
1200.0	5.735	35.156	239.0	5.626	4450.0	2.584	34.908	241.0	2.181
1250.0	5.439	35.115	244.3	5.327	4500.0	2.590	34.908	240.9	2.180
1300.0	5.060	35.064	250.4	4.947	4550.0	2.595	34.908	241.0	2.179
1350.0	4.816	35.030	255.4	4.701	4600.0	2.601	34.908	240.8	2.178
1400.0	4.523	34.992	260.6	4.407	4650.0	2.606	34.908	241.0	2.177
1450.0	4.404	34.982	262.5	4.284	4700.0	2.612	34.908	240.9	2.176
1500.0	4.296	34.969	264.2	4.172	4750.0	2.618	34.908	241.0	2.176
1550.0	4.231	34.966	264.6	4.103	4800.0	2.624	34.908	241.0	2.175
1600.0	4.099	34.952	266.5	3.968	4850.0	2.630	34.908	241.0	2.175
1650.0	4.013	34.946	267.1	3.879	4900.0	2.637	34.908	241.0	2.176
1700.0	3.928	34.940	268.1	3.790	4909.0	2.638	34.908	241.2	2.175
1750.0	3.870	34.938	268.1	3.729					
1800.0	3.806	34.935	268.6	3.661					
1850.0	3.767	34.936	268.4	3.617					
1900.0	3.720	34.936	268.6	3.567					
1950.0	3.663	34.933	268.9	3.505					
2000.0	3.600	34.930	269.5	3.439					
2050.0	3.530	34.928	269.9	3.365					
2100.0	3.486	34.927	270.1	3.317					
2150.0	3.424	34.925	270.7	3.251					
2200.0	3.375	34.926	270.7	3.198					
2250.0	3.332	34.926	270.7	3.150					
2300.0	3.279	34.928	270.2	3.094					
2350.0	3.230	34.928	270.1	3.041					
2400.0	3.197	34.931	269.3	3.003					
2450.0	3.172	34.934	267.9	2.974					
2500.0	3.144	34.936	266.8	2.942					
2550.0	3.118	34.938	265.4	2.910					
2600.0	3.083	34.942	262.9	2.872					
2650.0	3.050	34.943	261.0	2.834					
2700.0	3.026	34.944	259.5	2.805					
2750.0	2.992	34.944	258.3	2.767					
2800.0	2.961	34.944	257.7	2.732					
2850.0	2.922	34.943	256.4	2.688					
2900.0	2.894	34.942	255.1	2.656					
2950.0	2.870	34.941	253.8	2.627					
3000.0	2.842	34.940	252.9	2.594					

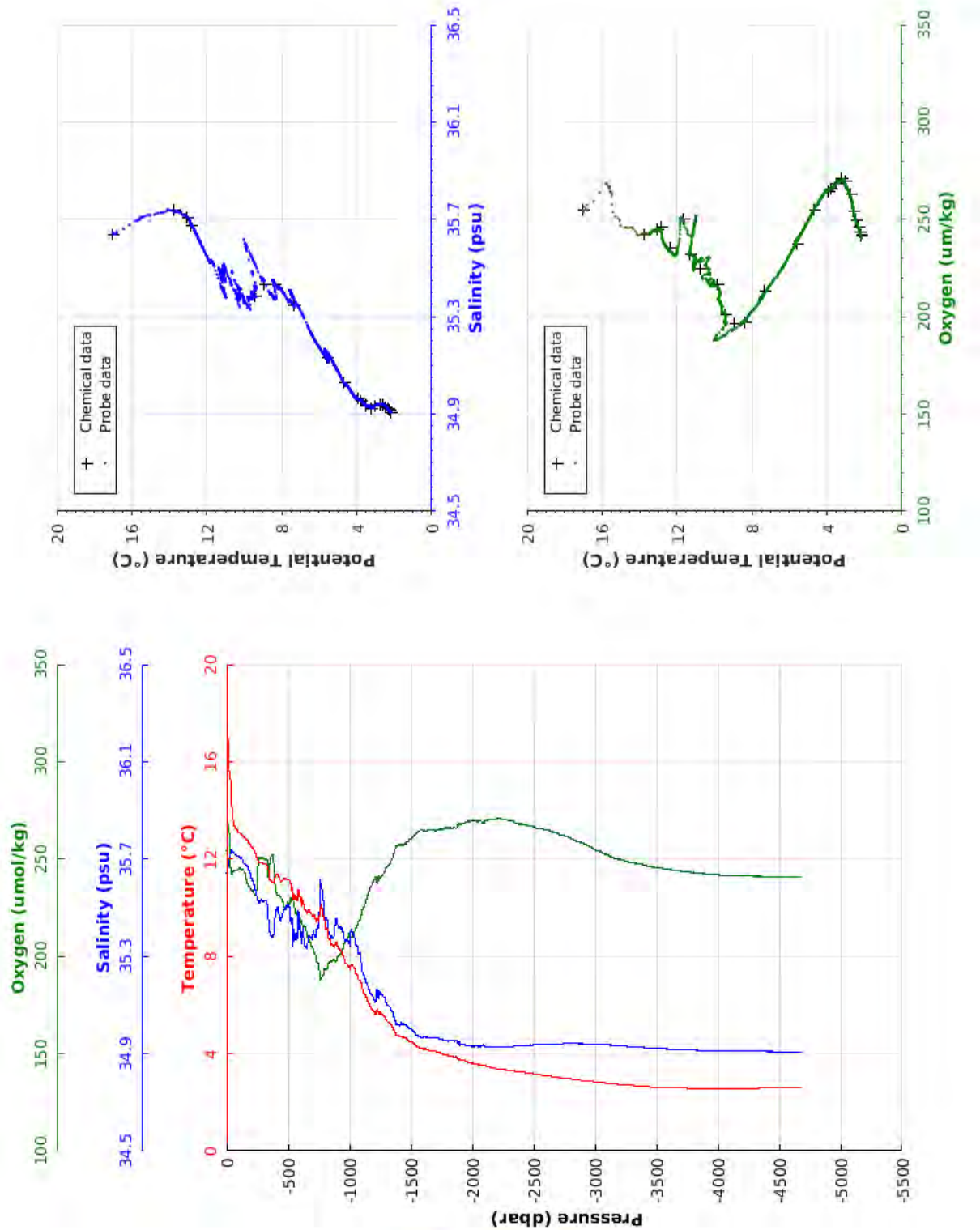


Station: 26



Cruise	: BOCATS 2016			
Station	: 27	Cast	: 1	
Date	: 29/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4608 m	Organism	: CSIC/IIM VIGO	
Position	: N 45 3.12			
	W 018 30.18			

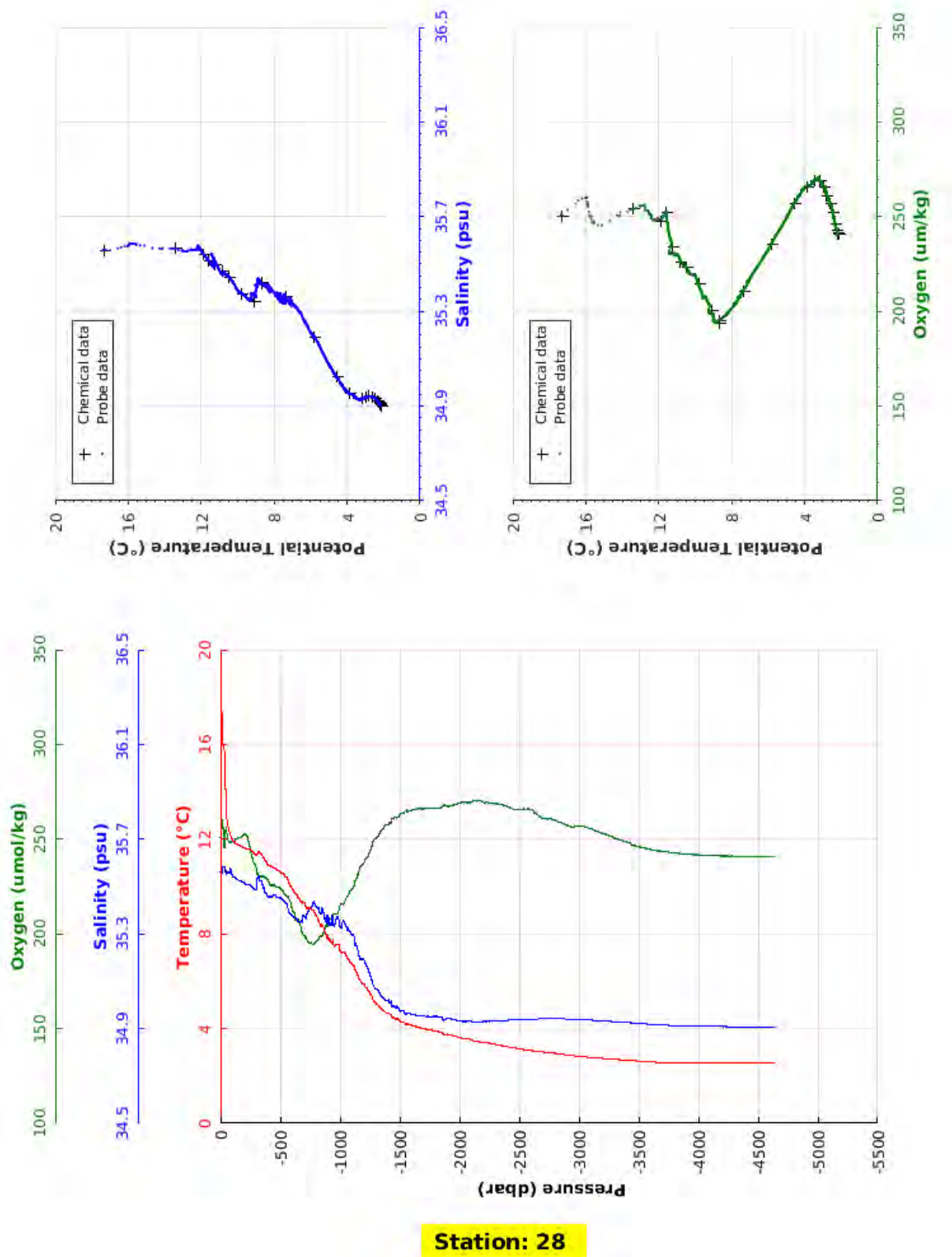
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.022	35.643	254.3	17.021	3050.0	2.815	34.938	253.5	2.563
10.0	16.971	35.644	256.4	16.969	3100.0	2.785	34.936	252.2	2.529
20.0	15.634	35.699	266.9	15.631	3150.0	2.760	34.934	250.8	2.499
30.0	15.428	35.709	253.8	15.424	3200.0	2.736	34.933	249.7	2.470
40.0	14.355	35.728	245.2	14.349	3250.0	2.717	34.931	249.1	2.446
50.0	13.663	35.733	242.9	13.656	3300.0	2.693	34.929	248.3	2.417
100.0	13.107	35.713	244.7	13.093	3350.0	2.677	34.927	247.7	2.396
150.0	12.856	35.681	243.2	12.835	3400.0	2.652	34.925	246.8	2.367
200.0	12.521	35.629	234.9	12.494	3450.0	2.634	34.923	246.1	2.343
250.0	12.021	35.546	233.9	11.988	3500.0	2.623	34.922	245.7	2.328
300.0	11.809	35.528	250.6	11.770	3550.0	2.612	34.920	245.1	2.312
350.0	11.199	35.410	243.6	11.155	3600.0	2.602	34.919	244.6	2.296
400.0	11.313	35.468	236.6	11.262	3650.0	2.593	34.918	244.1	2.282
450.0	11.110	35.460	229.9	11.053	3700.0	2.588	34.917	243.8	2.271
500.0	11.177	35.514	227.1	11.113	3750.0	2.581	34.916	243.4	2.259
550.0	10.557	35.407	226.7	10.489	3800.0	2.577	34.915	243.1	2.249
600.0	10.290	35.386	219.4	10.217	3850.0	2.570	34.914	242.8	2.237
650.0	9.853	35.343	213.6	9.777	3900.0	2.569	34.913	242.5	2.231
700.0	9.676	35.373	205.2	9.594	3950.0	2.569	34.912	242.2	2.224
750.0	9.467	35.424	196.5	9.380	4000.0	2.564	34.911	241.9	2.214
800.0	9.235	35.465	193.5	9.143	4050.0	2.566	34.911	241.6	2.210
850.0	8.484	35.371	197.7	8.390	4100.0	2.567	34.911	241.5	2.206
900.0	8.536	35.448	197.9	8.437	4150.0	2.569	34.910	241.5	2.201
950.0	8.030	35.400	203.7	7.928	4200.0	2.572	34.910	241.3	2.198
1000.0	7.512	35.352	210.3	7.408	4250.0	2.575	34.910	241.3	2.195
1050.0	7.317	35.353	213.8	7.209	4300.0	2.577	34.909	241.1	2.192
1100.0	6.727	35.261	221.2	6.619	4350.0	2.581	34.909	241.1	2.190
1150.0	6.154	35.179	230.9	6.046	4400.0	2.584	34.909	240.9	2.187
1200.0	5.732	35.130	238.4	5.622	4450.0	2.587	34.908	240.9	2.183
1250.0	5.636	35.144	240.4	5.523	4500.0	2.591	34.908	240.8	2.181
1300.0	5.379	35.112	244.9	5.263	4550.0	2.596	34.908	240.7	2.180
1350.0	5.107	35.073	249.9	4.989	4600.0	2.601	34.908	240.8	2.179
1400.0	4.718	35.020	257.0	4.599	4650.0	2.607	34.908	240.9	2.178
1450.0	4.653	35.020	257.5	4.530	4685.0	2.610	34.908	240.9	2.177
1500.0	4.497	35.001	260.2	4.371					
1550.0	4.306	34.978	263.2	4.178					
1600.0	4.193	34.966	264.8	4.061					
1650.0	4.120	34.963	265.2	3.984					
1700.0	4.090	34.965	264.7	3.950					
1750.0	4.002	34.959	265.4	3.858					
1800.0	3.914	34.952	266.1	3.767					
1850.0	3.865	34.952	266.0	3.714					
1900.0	3.737	34.935	267.9	3.583					
1950.0	3.679	34.934	268.6	3.521					
2000.0	3.601	34.930	269.7	3.440					
2050.0	3.557	34.931	269.4	3.391					
2100.0	3.533	34.934	268.7	3.363					
2150.0	3.437	34.928	270.1	3.263					
2200.0	3.377	34.925	270.7	3.199					
2250.0	3.343	34.927	270.5	3.161					
2300.0	3.308	34.930	269.7	3.122					
2350.0	3.273	34.932	268.8	3.083					
2400.0	3.239	34.933	267.9	3.044					
2450.0	3.212	34.935	267.2	3.013					
2500.0	3.171	34.936	266.7	2.968					
2550.0	3.135	34.937	265.8	2.928					
2600.0	3.088	34.938	265.3	2.877					
2650.0	3.055	34.939	264.0	2.839					
2700.0	3.029	34.940	263.2	2.808					
2750.0	2.991	34.941	262.0	2.766					
2800.0	2.962	34.941	260.8	2.733					
2850.0	2.916	34.941	259.3	2.683					
2900.0	2.891	34.941	258.4	2.653					
2950.0	2.865	34.940	256.6	2.622					
3000.0	2.837	34.939	254.8	2.590					



Station: 27

Cruise	: BOCATS 2016			
Station	: 28	Cast	: 1	
Date	: 29/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4569 m	Organism	: CSIC/IIM VIGO	
Position	: N 45 25.14 W 018 47.67			

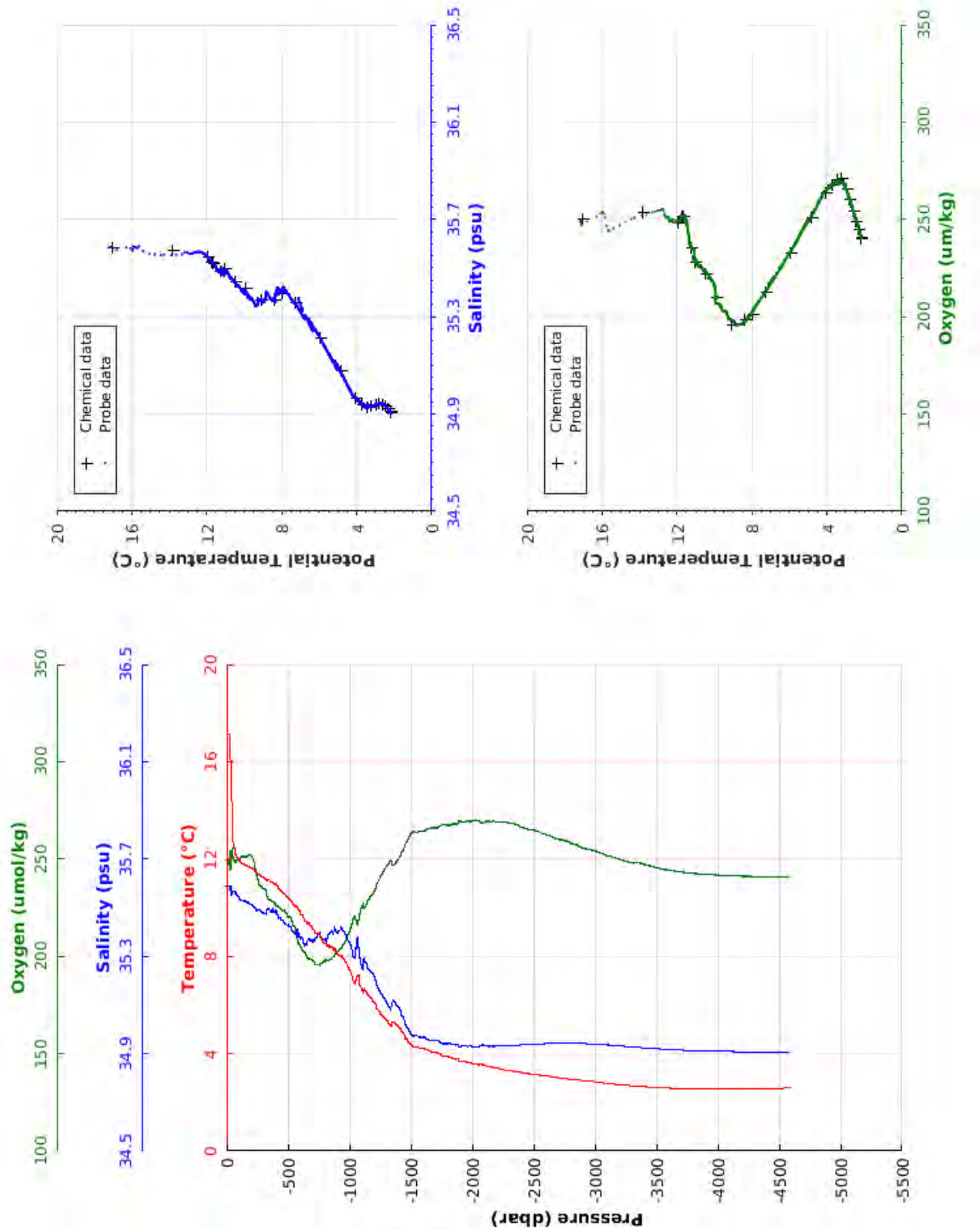
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.330	35.560	251.0	17.330	3050.0	2.805	34.937	256.6	2.553
10.0	17.320	35.560	250.6	17.319	3100.0	2.780	34.936	255.4	2.523
20.0	16.196	35.574	259.5	16.193	3150.0	2.762	34.934	254.3	2.500
30.0	15.816	35.585	250.6	15.812	3200.0	2.739	34.933	253.0	2.473
40.0	14.682	35.568	247.7	14.676	3250.0	2.721	34.931	252.0	2.450
50.0	13.018	35.559	255.8	13.012	3300.0	2.703	34.930	250.6	2.427
100.0	11.986	35.551	248.3	11.972	3350.0	2.684	34.928	249.6	2.403
150.0	11.747	35.528	250.1	11.727	3400.0	2.670	34.926	248.7	2.384
200.0	11.635	35.515	252.6	11.609	3450.0	2.650	34.924	246.9	2.359
250.0	11.551	35.506	246.1	11.519	3500.0	2.630	34.922	245.9	2.334
300.0	11.325	35.488	236.2	11.287	3550.0	2.617	34.920	245.3	2.316
350.0	11.327	35.518	230.3	11.283	3600.0	2.594	34.918	244.6	2.288
400.0	10.933	35.459	228.4	10.883	3650.0	2.580	34.916	244.0	2.269
450.0	10.795	35.465	225.5	10.740	3700.0	2.574	34.915	243.5	2.258
500.0	10.643	35.455	224.7	10.582	3750.0	2.566	34.914	243.1	2.244
550.0	10.387	35.430	220.2	10.320	3800.0	2.560	34.913	242.7	2.233
600.0	9.893	35.378	214.1	9.823	3850.0	2.560	34.912	242.5	2.227
650.0	9.527	35.352	208.0	9.452	3900.0	2.556	34.912	242.1	2.218
700.0	9.326	35.376	199.4	9.246	3950.0	2.555	34.911	242.0	2.210
750.0	9.080	35.411	195.0	8.995	4000.0	2.553	34.910	241.7	2.204
800.0	8.763	35.415	195.6	8.674	4050.0	2.556	34.910	241.6	2.200
850.0	8.383	35.407	198.8	8.291	4100.0	2.558	34.910	241.4	2.196
900.0	7.944	35.380	204.1	7.848	4150.0	2.558	34.909	241.4	2.190
950.0	7.492	35.335	210.1	7.395	4200.0	2.560	34.909	241.2	2.187
1000.0	7.266	35.332	214.3	7.164	4250.0	2.563	34.908	241.1	2.184
1050.0	7.059	35.331	218.2	6.954	4300.0	2.565	34.908	240.9	2.179
1100.0	6.738	35.298	223.3	6.630	4350.0	2.567	34.908	241.0	2.176
1150.0	6.269	35.236	230.3	6.160	4400.0	2.569	34.907	240.9	2.172
1200.0	5.893	35.194	236.7	5.782	4450.0	2.572	34.907	240.8	2.169
1250.0	5.497	35.133	242.9	5.385	4500.0	2.574	34.907	240.8	2.164
1300.0	5.061	35.069	250.4	4.948	4550.0	2.573	34.906	240.8	2.157
1350.0	4.826	35.037	254.4	4.711	4600.0	2.570	34.905	240.9	2.149
1400.0	4.648	35.017	257.8	4.530	4647.0	2.565	34.904	241.0	2.138
1450.0	4.472	34.996	260.7	4.351					
1500.0	4.337	34.980	262.4	4.213					
1550.0	4.197	34.962	264.9	4.070					
1600.0	4.148	34.962	265.0	4.017					
1650.0	4.064	34.955	266.0	3.929					
1700.0	4.014	34.954	266.0	3.876					
1750.0	3.946	34.951	266.5	3.803					
1800.0	3.897	34.951	266.3	3.750					
1850.0	3.838	34.949	266.5	3.687					
1900.0	3.760	34.943	267.6	3.605					
1950.0	3.699	34.940	267.9	3.541					
2000.0	3.622	34.932	269.2	3.461					
2050.0	3.565	34.930	269.6	3.399					
2100.0	3.535	34.931	269.4	3.365					
2150.0	3.457	34.926	270.3	3.284					
2200.0	3.428	34.930	269.6	3.250					
2250.0	3.384	34.931	269.2	3.202					
2300.0	3.331	34.932	268.8	3.144					
2350.0	3.281	34.931	268.4	3.090					
2400.0	3.230	34.935	267.3	3.036					
2450.0	3.191	34.937	266.0	2.992					
2500.0	3.154	34.938	265.4	2.952					
2550.0	3.106	34.937	265.8	2.899					
2600.0	3.075	34.938	265.7	2.864					
2650.0	3.045	34.940	263.2	2.829					
2700.0	3.015	34.942	261.1	2.795					
2750.0	2.990	34.942	260.7	2.765					
2800.0	2.964	34.942	260.2	2.734					
2850.0	2.927	34.941	258.8	2.693					
2900.0	2.888	34.941	257.5	2.650					
2950.0	2.857	34.940	256.1	2.614					
3000.0	2.818	34.938	256.9	2.571					



Cruise	: BOCATS 2016			
Station	: 29	Cast	: 1	
Date	: 30/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4520 m	Organism	: CSIC/IIM VIGO	
Position	: N 45 47.63			
	W 019 5.16			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.138	35.587	249.2	17.138	3050.0	2.813	34.938	252.9	2.561
10.0	17.139	35.586	249.2	17.137	3100.0	2.777	34.936	251.7	2.520
20.0	17.136	35.586	249.0	17.132	3150.0	2.751	34.934	251.0	2.490
30.0	16.294	35.584	251.5	16.289	3200.0	2.721	34.932	249.9	2.455
40.0	15.079	35.559	247.3	15.073	3250.0	2.699	34.930	248.9	2.429
50.0	12.861	35.559	255.0	12.854	3300.0	2.680	34.928	248.2	2.405
100.0	11.970	35.546	249.6	11.957	3350.0	2.658	34.926	248.3	2.378
150.0	11.749	35.526	251.1	11.730	3400.0	2.642	34.924	247.5	2.357
200.0	11.622	35.513	252.3	11.597	3450.0	2.621	34.922	246.4	2.331
250.0	11.392	35.486	241.4	11.360	3500.0	2.606	34.920	245.6	2.311
300.0	11.222	35.478	235.3	11.184	3550.0	2.591	34.918	244.8	2.291
350.0	11.136	35.493	229.1	11.092	3600.0	2.581	34.917	244.3	2.276
400.0	10.984	35.489	226.9	10.934	3650.0	2.570	34.915	243.9	2.259
450.0	10.672	35.451	224.3	10.616	3700.0	2.565	34.914	243.4	2.248
500.0	10.394	35.425	221.3	10.334	3750.0	2.559	34.913	243.0	2.237
550.0	10.085	35.397	216.0	10.020	3800.0	2.552	34.912	242.6	2.225
600.0	9.805	35.379	206.0	9.734	3850.0	2.550	34.912	242.3	2.217
650.0	9.405	35.350	200.9	9.331	3900.0	2.549	34.911	242.2	2.210
700.0	9.132	35.361	198.3	9.052	3950.0	2.549	34.911	241.9	2.205
750.0	8.910	35.394	195.6	8.826	4000.0	2.549	34.910	241.7	2.199
800.0	8.522	35.367	197.5	8.434	4050.0	2.549	34.909	241.5	2.193
850.0	8.381	35.399	198.4	8.288	4100.0	2.550	34.909	241.4	2.188
900.0	8.088	35.396	202.1	7.992	4150.0	2.551	34.908	241.2	2.183
950.0	7.903	35.406	205.6	7.802	4200.0	2.552	34.908	241.3	2.179
1000.0	7.430	35.356	212.1	7.327	4250.0	2.556	34.908	241.0	2.177
1050.0	6.893	35.295	220.8	6.789	4300.0	2.559	34.908	241.0	2.174
1100.0	6.611	35.264	224.5	6.504	4350.0	2.562	34.907	240.8	2.171
1150.0	6.400	35.252	228.1	6.290	4400.0	2.566	34.907	240.9	2.169
1200.0	6.131	35.222	232.5	6.017	4450.0	2.572	34.907	240.7	2.169
1250.0	5.689	35.158	239.8	5.575	4500.0	2.577	34.907	240.8	2.167
1300.0	5.373	35.114	245.5	5.257	4550.0	2.583	34.907	240.6	2.167
1350.0	5.258	35.106	248.0	5.139	4596.0	2.587	34.907	240.8	2.165
1400.0	5.113	35.092	249.7	4.990					
1450.0	4.749	35.037	255.4	4.625					
1500.0	4.355	34.980	262.5	4.231					
1550.0	4.285	34.974	263.7	4.157					
1600.0	4.214	34.968	264.4	4.082					
1650.0	4.102	34.956	265.7	3.966					
1700.0	4.055	34.954	265.9	3.916					
1750.0	3.932	34.944	267.3	3.790					
1800.0	3.886	34.943	267.2	3.739					
1850.0	3.802	34.938	268.0	3.652					
1900.0	3.695	34.929	269.4	3.542					
1950.0	3.652	34.930	269.2	3.494					
2000.0	3.586	34.929	269.6	3.425					
2050.0	3.548	34.929	269.7	3.383					
2100.0	3.521	34.933	268.8	3.351					
2150.0	3.469	34.933	269.0	3.295					
2200.0	3.409	34.932	269.1	3.231					
2250.0	3.348	34.931	269.1	3.166					
2300.0	3.306	34.932	268.4	3.120					
2350.0	3.262	34.934	268.0	3.072					
2400.0	3.229	34.937	266.5	3.034					
2450.0	3.179	34.938	265.4	2.981					
2500.0	3.150	34.939	264.7	2.947					
2550.0	3.113	34.940	263.8	2.906					
2600.0	3.086	34.941	262.7	2.874					
2650.0	3.053	34.942	261.3	2.837					
2700.0	3.012	34.943	260.0	2.792					
2750.0	2.982	34.943	259.6	2.758					
2800.0	2.953	34.943	258.4	2.724					
2850.0	2.930	34.942	257.4	2.696					
2900.0	2.891	34.941	255.8	2.653					
2950.0	2.873	34.941	255.1	2.630					
3000.0	2.842	34.939	254.0	2.595					

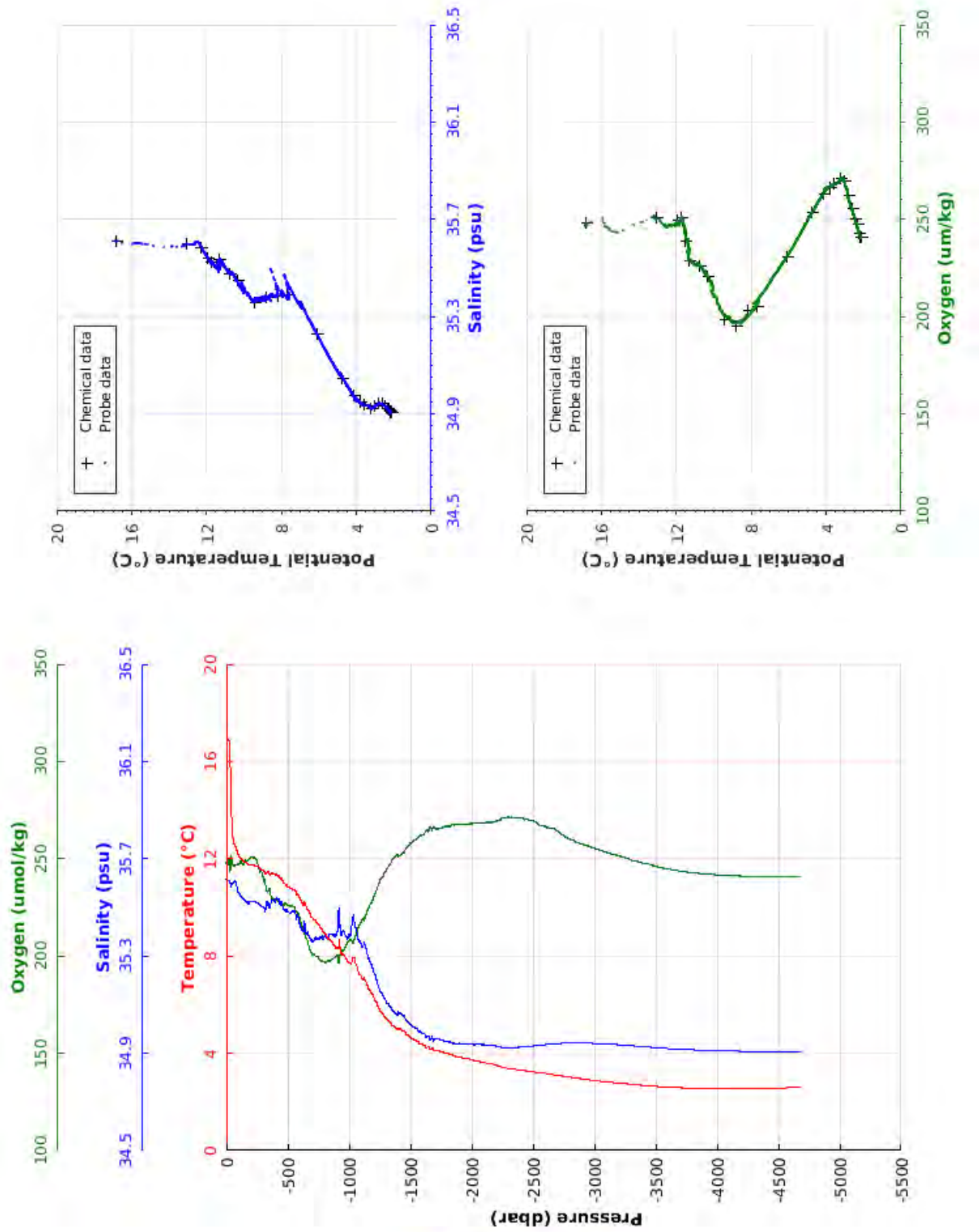




Station: 29

Cruise	: BOCATS 2016			
Station	: 30	Cast	: 1	
Date	: 30/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4616 m	Organism	: CSIC/IIM VIGO	
Position	: N 46 10.15 W 019 22.58			

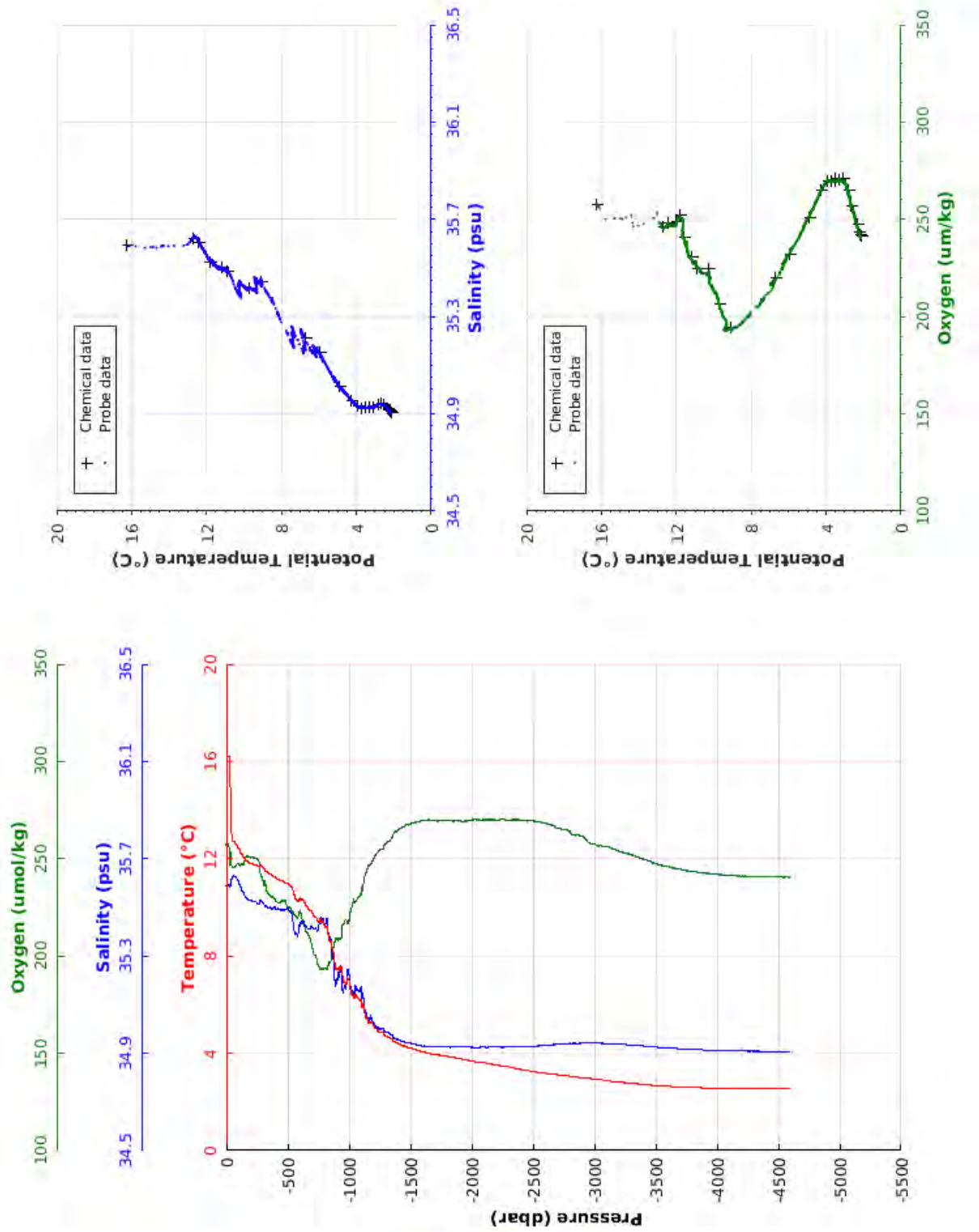
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.886	35.613	248.2	16.886	3050.0	2.848	34.939	254.2	2.596
10.0	16.887	35.613	247.6	16.885	3100.0	2.824	34.938	253.6	2.567
20.0	16.871	35.612	247.7	16.867	3150.0	2.801	34.937	252.4	2.539
30.0	15.836	35.602	246.7	15.832	3200.0	2.775	34.935	251.4	2.508
40.0	14.275	35.584	247.2	14.269	3250.0	2.751	34.933	250.6	2.480
50.0	13.132	35.598	250.2	13.125	3300.0	2.721	34.931	249.5	2.445
100.0	12.133	35.563	247.1	12.120	3350.0	2.704	34.929	248.7	2.423
150.0	11.868	35.530	247.0	11.849	3400.0	2.684	34.927	247.7	2.397
200.0	11.765	35.523	250.8	11.739	3450.0	2.665	34.925	247.2	2.374
250.0	11.696	35.521	249.6	11.664	3500.0	2.643	34.923	246.2	2.347
300.0	11.531	35.505	242.2	11.492	3550.0	2.623	34.921	245.4	2.322
350.0	11.348	35.499	234.5	11.303	3600.0	2.605	34.919	244.7	2.299
400.0	11.317	35.521	229.1	11.266	3650.0	2.596	34.918	244.2	2.285
450.0	11.207	35.524	227.8	11.150	3700.0	2.583	34.916	243.6	2.266
500.0	10.852	35.480	226.3	10.789	3750.0	2.577	34.915	243.2	2.255
550.0	10.738	35.485	225.4	10.670	3800.0	2.572	34.914	242.9	2.244
600.0	10.356	35.430	220.1	10.283	3850.0	2.566	34.913	242.6	2.233
650.0	10.006	35.406	210.0	9.929	3900.0	2.559	34.912	242.1	2.220
700.0	9.589	35.367	201.1	9.507	3950.0	2.557	34.911	242.0	2.213
750.0	9.260	35.368	199.7	9.174	4000.0	2.557	34.911	241.6	2.207
800.0	8.938	35.380	196.8	8.848	4050.0	2.555	34.910	241.6	2.200
850.0	8.625	35.389	197.7	8.531	4100.0	2.555	34.909	241.4	2.194
900.0	8.333	35.394	199.7	8.235	4150.0	2.556	34.909	241.2	2.189
950.0	8.095	35.402	202.7	7.993	4200.0	2.556	34.909	241.1	2.183
1000.0	7.734	35.384	207.5	7.629	4250.0	2.557	34.908	241.0	2.177
1050.0	7.727	35.427	209.1	7.616	4300.0	2.559	34.908	240.9	2.174
1100.0	7.140	35.349	217.1	7.029	4350.0	2.562	34.907	240.8	2.171
1150.0	6.809	35.314	222.3	6.695	4400.0	2.566	34.907	240.7	2.168
1200.0	6.313	35.241	229.4	6.198	4450.0	2.570	34.907	240.6	2.167
1250.0	5.772	35.163	237.7	5.657	4500.0	2.576	34.907	240.6	2.166
1300.0	5.468	35.119	243.1	5.351	4550.0	2.579	34.906	240.5	2.163
1350.0	5.153	35.079	248.8	5.035	4600.0	2.584	34.906	240.7	2.162
1400.0	5.028	35.068	251.7	4.906	4650.0	2.583	34.906	240.5	2.155
1450.0	4.899	35.055	253.3	4.773	4683.0	2.581	34.905	240.9	2.149
1500.0	4.639	35.018	257.5	4.512					
1550.0	4.518	35.004	259.6	4.387					
1600.0	4.355	34.983	262.2	4.221					
1650.0	4.246	34.969	264.0	4.109					
1700.0	4.111	34.956	265.9	3.971					
1750.0	4.065	34.955	265.8	3.921					
1800.0	3.993	34.950	266.4	3.845					
1850.0	3.899	34.940	267.6	3.747					
1900.0	3.839	34.941	267.6	3.684					
1950.0	3.789	34.941	267.7	3.630					
2000.0	3.736	34.939	268.0	3.572					
2050.0	3.673	34.936	268.3	3.506					
2100.0	3.624	34.936	268.5	3.453					
2150.0	3.583	34.935	268.6	3.407					
2200.0	3.505	34.930	269.4	3.325					
2250.0	3.416	34.922	271.0	3.233					
2300.0	3.372	34.923	271.3	3.186					
2350.0	3.336	34.924	271.2	3.145					
2400.0	3.310	34.925	270.9	3.114					
2450.0	3.268	34.927	270.5	3.068					
2500.0	3.236	34.929	269.6	3.032					
2550.0	3.212	34.934	267.5	3.003					
2600.0	3.177	34.936	266.7	2.964					
2650.0	3.128	34.937	265.5	2.910					
2700.0	3.089	34.939	264.1	2.867					
2750.0	3.062	34.941	262.0	2.836					
2800.0	3.028	34.942	260.1	2.798					
2850.0	2.983	34.943	258.9	2.748					
2900.0	2.953	34.942	257.7	2.714					
2950.0	2.923	34.942	256.5	2.679					
3000.0	2.877	34.941	255.5	2.629					



Station: 30

Cruise	: BOCATS 2016			
Station	: 31	Cast	: 1	
Date	: 30/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4512 m	Organism	: CSIC/IIM VIGO	
Position	: N 46 32.51 W 019 40.46			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.233	35.591	257.2	16.233	3050.0	2.910	34.941	256.8	2.656
10.0	16.224	35.591	257.4	16.222	3100.0	2.874	34.940	256.2	2.615
20.0	16.208	35.591	257.0	16.205	3150.0	2.844	34.939	255.2	2.581
30.0	15.307	35.583	250.6	15.303	3200.0	2.817	34.937	253.8	2.549
40.0	13.215	35.593	250.6	13.210	3250.0	2.793	34.936	252.9	2.521
50.0	12.777	35.622	245.8	12.770	3300.0	2.770	34.934	252.2	2.492
100.0	12.448	35.612	247.4	12.435	3350.0	2.745	34.932	250.8	2.462
150.0	12.021	35.553	247.7	12.001	3400.0	2.719	34.930	249.9	2.432
200.0	11.817	35.530	250.6	11.791	3450.0	2.697	34.928	248.8	2.405
250.0	11.716	35.520	250.2	11.683	3500.0	2.671	34.926	247.4	2.374
300.0	11.631	35.518	240.5	11.593	3550.0	2.651	34.924	246.6	2.350
350.0	11.388	35.498	231.4	11.343	3600.0	2.646	34.923	246.1	2.339
400.0	11.224	35.497	229.1	11.174	3650.0	2.627	34.921	245.2	2.315
450.0	11.081	35.488	227.8	11.024	3700.0	2.608	34.918	244.6	2.290
500.0	10.986	35.496	225.6	10.923	3750.0	2.596	34.917	243.9	2.273
550.0	10.491	35.412	222.4	10.424	3800.0	2.588	34.916	243.3	2.260
600.0	10.366	35.428	222.3	10.293	3850.0	2.582	34.915	243.1	2.249
650.0	10.080	35.424	213.0	10.002	3900.0	2.577	34.914	242.8	2.238
700.0	9.798	35.418	206.2	9.715	3950.0	2.571	34.913	242.2	2.226
750.0	9.412	35.412	195.8	9.326	4000.0	2.566	34.912	241.9	2.216
800.0	9.266	35.435	193.5	9.174	4050.0	2.563	34.911	241.6	2.208
850.0	8.628	35.376	196.3	8.534	4100.0	2.562	34.910	241.5	2.200
900.0	7.475	35.195	208.9	7.383	4150.0	2.560	34.909	241.3	2.193
950.0	6.924	35.152	215.3	6.830	4200.0	2.561	34.909	241.1	2.188
1000.0	6.986	35.234	217.2	6.887	4250.0	2.565	34.909	241.1	2.186
1050.0	6.422	35.180	227.2	6.322	4300.0	2.571	34.909	241.0	2.185
1100.0	6.211	35.173	230.7	6.108	4350.0	2.574	34.908	240.8	2.183
1150.0	5.384	35.054	243.8	5.283	4400.0	2.576	34.908	240.8	2.178
1200.0	5.142	35.029	249.4	5.038	4450.0	2.576	34.907	240.6	2.172
1250.0	4.877	34.999	254.4	4.771	4500.0	2.576	34.907	240.6	2.166
1300.0	4.710	34.987	257.7	4.600	4550.0	2.578	34.906	240.7	2.163
1350.0	4.582	34.976	260.4	4.469	4600.0	2.579	34.906	240.6	2.157
1400.0	4.403	34.956	264.5	4.288	4601.0	2.578	34.906	240.7	2.156
1450.0	4.292	34.947	266.5	4.174					
1500.0	4.228	34.942	267.6	4.106					
1550.0	4.142	34.936	268.7	4.016					
1600.0	4.055	34.930	269.5	3.925					
1650.0	3.991	34.927	269.9	3.858					
1700.0	3.959	34.928	269.6	3.821					
1750.0	3.904	34.925	269.9	3.762					
1800.0	3.872	34.925	269.8	3.726					
1850.0	3.846	34.927	269.3	3.695					
1900.0	3.778	34.926	269.4	3.624					
1950.0	3.738	34.927	269.5	3.579					
2000.0	3.680	34.925	269.9	3.517					
2050.0	3.640	34.924	270.0	3.474					
2100.0	3.610	34.925	269.9	3.439					
2150.0	3.569	34.926	270.0	3.393					
2200.0	3.522	34.927	269.6	3.343					
2250.0	3.462	34.924	270.5	3.278					
2300.0	3.447	34.928	269.6	3.259					
2350.0	3.378	34.926	270.1	3.186					
2400.0	3.331	34.927	269.9	3.135					
2450.0	3.293	34.928	269.4	3.093					
2500.0	3.247	34.929	269.5	3.042					
2550.0	3.209	34.930	269.1	3.001					
2600.0	3.182	34.932	268.2	2.968					
2650.0	3.142	34.934	267.4	2.925					
2700.0	3.114	34.937	265.9	2.892					
2750.0	3.086	34.938	265.0	2.860					
2800.0	3.053	34.939	263.9	2.822					
2850.0	3.022	34.941	262.3	2.787					
2900.0	2.989	34.941	261.8	2.749					
2950.0	2.970	34.942	258.4	2.725					
3000.0	2.943	34.942	257.4	2.693					

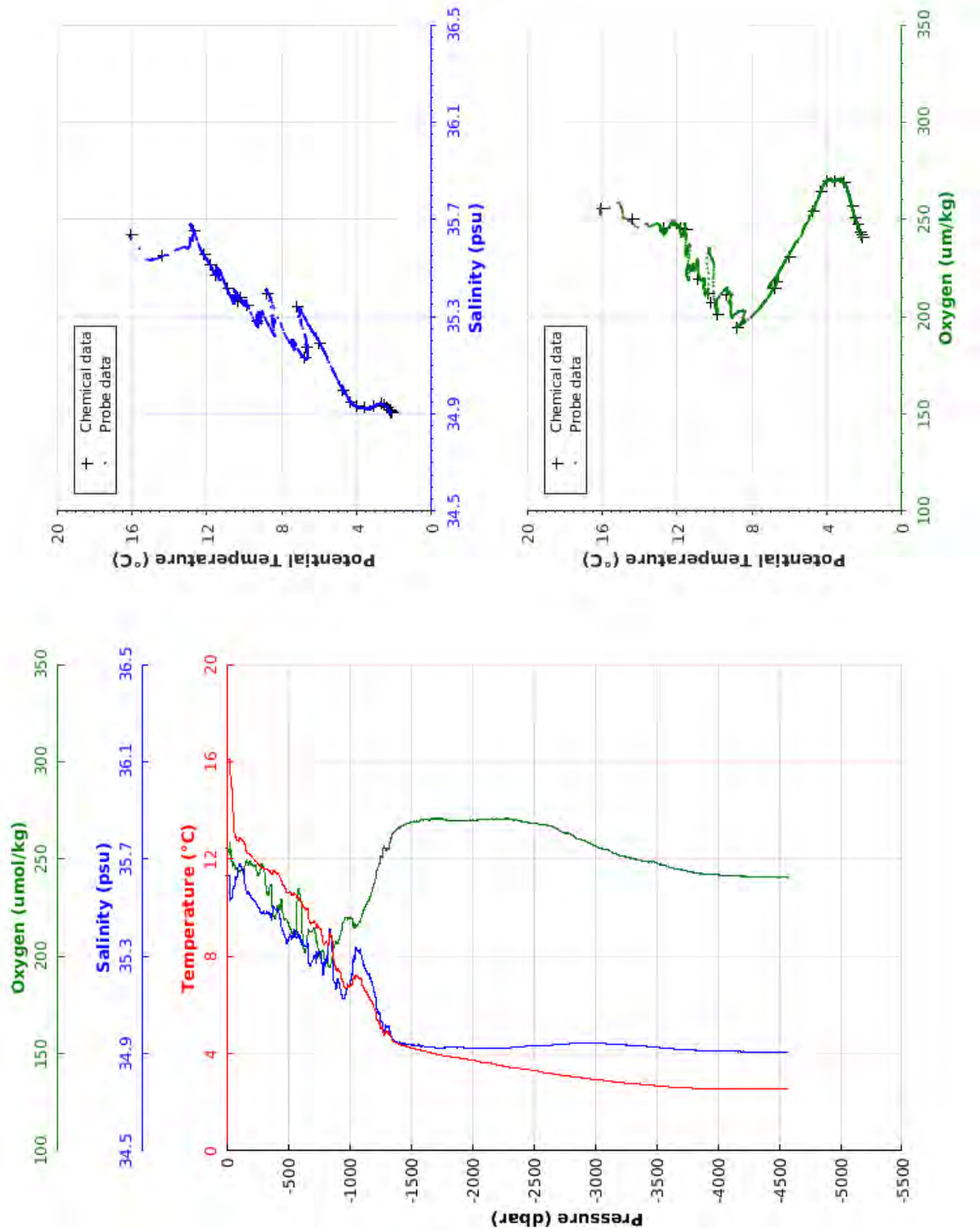


Station: 31



Cruise	: BOCATS 2016			
Station	: 32	Cast	: 1	
Date	: 30/06/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4503 m	Organism	: CSIC/IIM VIGO	
Position	: N 46 55.06 W 019 58.09			

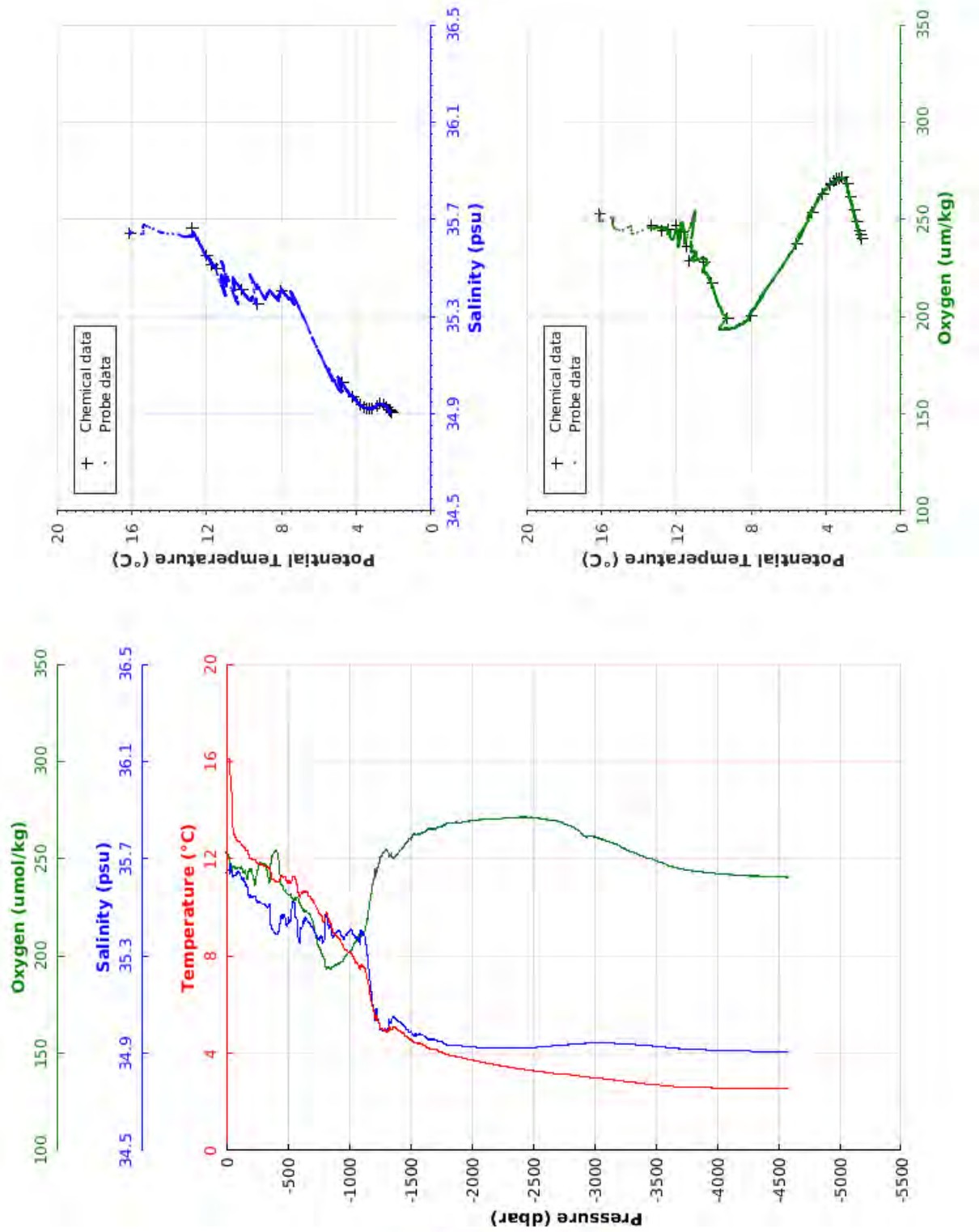
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.111	35.633	255.5	16.111	3050.0	2.911	34.942	255.5	2.657
10.0	16.118	35.633	255.2	16.117	3100.0	2.886	34.941	254.9	2.627
20.0	16.117	35.633	254.9	16.114	3150.0	2.847	34.939	253.2	2.584
30.0	16.045	35.625	253.1	16.040	3200.0	2.812	34.937	252.0	2.544
40.0	14.941	35.534	254.6	14.935	3250.0	2.790	34.936	251.1	2.518
50.0	14.412	35.547	248.5	14.405	3300.0	2.771	34.934	250.3	2.493
100.0	12.849	35.668	244.6	12.835	3350.0	2.747	34.932	249.5	2.465
150.0	12.568	35.621	244.4	12.548	3400.0	2.728	34.931	248.9	2.441
200.0	12.113	35.545	248.1	12.086	3450.0	2.702	34.928	248.6	2.410
250.0	11.853	35.514	243.9	11.820	3500.0	2.683	34.927	248.1	2.386
300.0	11.619	35.481	246.7	11.581	3550.0	2.661	34.924	247.0	2.359
350.0	11.529	35.483	232.4	11.484	3600.0	2.635	34.922	246.1	2.328
400.0	11.447	35.493	219.2	11.396	3650.0	2.613	34.919	244.9	2.301
450.0	11.011	35.421	228.0	10.955	3700.0	2.607	34.918	244.5	2.290
500.0	10.626	35.365	217.7	10.565	3750.0	2.589	34.916	243.8	2.267
550.0	10.602	35.410	211.8	10.534	3800.0	2.577	34.915	243.1	2.249
600.0	10.336	35.384	232.4	10.263	3850.0	2.570	34.914	242.7	2.237
650.0	9.931	35.342	202.5	9.854	3900.0	2.566	34.913	242.4	2.227
700.0	9.396	35.283	212.3	9.315	3950.0	2.567	34.912	242.2	2.222
750.0	9.200	35.311	204.7	9.114	4000.0	2.561	34.911	242.0	2.211
800.0	8.530	35.264	198.9	8.442	4050.0	2.558	34.910	241.6	2.202
850.0	8.798	35.393	195.1	8.703	4100.0	2.559	34.910	241.4	2.197
900.0	7.468	35.184	207.3	7.376	4150.0	2.558	34.909	241.3	2.190
950.0	6.819	35.125	216.3	6.727	4200.0	2.557	34.909	241.2	2.184
1000.0	6.731	35.175	220.1	6.634	4250.0	2.560	34.908	241.0	2.181
1050.0	7.174	35.319	216.1	7.068	4300.0	2.561	34.908	241.0	2.176
1100.0	6.912	35.300	219.4	6.802	4350.0	2.563	34.907	240.8	2.171
1150.0	6.413	35.233	227.3	6.303	4400.0	2.562	34.907	240.8	2.165
1200.0	5.892	35.163	236.1	5.781	4450.0	2.564	34.906	240.7	2.161
1250.0	5.220	35.054	247.7	5.110	4500.0	2.567	34.906	240.7	2.158
1300.0	4.930	35.018	253.9	4.818	4550.0	2.572	34.906	240.6	2.156
1350.0	4.536	34.960	262.0	4.423	4579.0	2.576	34.906	240.8	2.156
1400.0	4.400	34.945	265.6	4.285					
1450.0	4.321	34.942	267.3	4.202					
1500.0	4.241	34.936	268.9	4.118					
1550.0	4.174	34.933	269.5	4.047					
1600.0	4.118	34.931	270.1	3.987					
1650.0	4.069	34.930	270.0	3.934					
1700.0	3.992	34.925	270.6	3.853					
1750.0	3.932	34.923	270.8	3.789					
1800.0	3.893	34.925	269.9	3.746					
1850.0	3.849	34.925	269.7	3.698					
1900.0	3.817	34.925	269.6	3.662					
1950.0	3.767	34.924	269.7	3.608					
2000.0	3.733	34.924	269.8	3.570					
2050.0	3.689	34.923	270.0	3.521					
2100.0	3.635	34.923	270.3	3.463					
2150.0	3.603	34.923	270.4	3.427					
2200.0	3.547	34.923	270.6	3.367					
2250.0	3.493	34.923	270.6	3.309					
2300.0	3.441	34.923	270.8	3.253					
2350.0	3.417	34.926	270.2	3.225					
2400.0	3.386	34.929	269.5	3.189					
2450.0	3.343	34.931	268.8	3.141					
2500.0	3.310	34.931	268.4	3.104					
2550.0	3.262	34.933	267.8	3.052					
2600.0	3.202	34.933	267.8	2.989					
2650.0	3.176	34.935	266.9	2.957					
2700.0	3.134	34.938	265.1	2.911					
2750.0	3.097	34.941	263.4	2.870					
2800.0	3.066	34.941	262.8	2.835					
2850.0	3.029	34.942	260.7	2.793					
2900.0	3.003	34.943	259.8	2.762					
2950.0	2.967	34.943	258.6	2.722					
3000.0	2.930	34.942	256.6	2.681					



Station: 32

Cruise	: BOCATS 2016			
Station	: 33	Cast	: 1	
Date	: 01/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4513 m	Organism	: CSIC/IIM VIGO	
Position	: N 47 17.47 W 020 15.81			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.100	35.643	253.6	16.100	3050.0	2.963	34.942	260.2	2.708
10.0	16.106	35.652	252.4	16.104	3100.0	2.939	34.942	259.2	2.679
20.0	16.104	35.652	252.2	16.101	3150.0	2.905	34.941	258.1	2.640
30.0	15.954	35.646	249.3	15.949	3200.0	2.875	34.940	256.9	2.606
40.0	15.209	35.672	244.9	15.203	3250.0	2.837	34.938	255.2	2.563
50.0	13.816	35.640	244.3	13.809	3300.0	2.808	34.936	253.5	2.530
100.0	12.732	35.648	245.5	12.718	3350.0	2.787	34.935	252.7	2.504
150.0	12.434	35.608	242.8	12.414	3400.0	2.750	34.932	251.2	2.462
200.0	12.025	35.548	243.6	11.999	3450.0	2.731	34.931	250.2	2.438
250.0	11.843	35.529	241.0	11.810	3500.0	2.707	34.928	249.1	2.409
300.0	11.735	35.514	246.8	11.696	3550.0	2.679	34.926	248.1	2.377
350.0	11.618	35.511	238.4	11.573	3600.0	2.648	34.923	246.6	2.341
400.0	11.059	35.392	253.7	11.009	3650.0	2.627	34.921	245.6	2.314
450.0	11.293	35.464	237.4	11.236	3700.0	2.618	34.919	244.9	2.301
500.0	10.995	35.424	232.0	10.932	3750.0	2.604	34.917	244.1	2.281
550.0	11.250	35.522	229.4	11.180	3800.0	2.596	34.916	243.9	2.268
600.0	10.383	35.352	227.7	10.310	3850.0	2.590	34.915	243.4	2.256
650.0	10.673	35.459	223.0	10.592	3900.0	2.583	34.914	243.0	2.244
700.0	10.306	35.420	219.0	10.221	3950.0	2.580	34.914	242.6	2.236
750.0	9.846	35.371	206.2	9.757	4000.0	2.579	34.913	242.4	2.228
800.0	9.428	35.364	199.0	9.335	4050.0	2.576	34.912	242.1	2.220
850.0	9.317	35.416	193.5	9.219	4100.0	2.573	34.911	241.9	2.211
900.0	8.821	35.396	195.5	8.720	4150.0	2.570	34.910	241.7	2.202
950.0	8.428	35.381	197.3	8.324	4200.0	2.569	34.910	241.5	2.195
1000.0	8.158	35.401	201.8	8.049	4250.0	2.566	34.909	241.2	2.187
1050.0	7.758	35.374	206.9	7.647	4300.0	2.567	34.908	241.1	2.182
1100.0	7.634	35.404	210.1	7.519	4350.0	2.568	34.908	241.1	2.176
1150.0	6.987	35.304	218.5	6.872	4400.0	2.566	34.907	240.8	2.169
1200.0	5.751	35.098	237.1	5.641	4450.0	2.567	34.906	240.8	2.163
1250.0	5.168	35.017	247.8	5.059	4500.0	2.565	34.906	240.7	2.156
1300.0	4.921	34.998	253.6	4.810	4550.0	2.559	34.905	240.6	2.144
1350.0	4.995	35.027	252.7	4.878	4590.0	2.559	34.904	240.6	2.139
1400.0	4.968	35.036	252.5	4.847					
1450.0	4.776	35.013	256.1	4.651					
1500.0	4.568	34.988	260.3	4.442					
1550.0	4.444	34.979	262.1	4.314					
1600.0	4.350	34.973	263.3	4.216					
1650.0	4.206	34.958	265.2	4.070					
1700.0	4.159	34.958	265.2	4.018					
1750.0	4.051	34.947	266.7	3.907					
1800.0	3.940	34.935	268.0	3.793					
1850.0	3.885	34.933	268.5	3.734					
1900.0	3.829	34.931	268.5	3.674					
1950.0	3.778	34.929	268.9	3.619					
2000.0	3.717	34.926	269.5	3.554					
2050.0	3.670	34.924	269.8	3.503					
2100.0	3.621	34.923	270.2	3.450					
2150.0	3.574	34.922	270.2	3.399					
2200.0	3.528	34.923	270.4	3.348					
2250.0	3.478	34.922	270.8	3.295					
2300.0	3.429	34.922	271.0	3.241					
2350.0	3.394	34.922	271.2	3.202					
2400.0	3.349	34.922	271.3	3.152					
2450.0	3.323	34.923	271.4	3.122					
2500.0	3.287	34.924	271.1	3.081					
2550.0	3.246	34.926	270.8	3.037					
2600.0	3.218	34.928	270.1	3.004					
2650.0	3.186	34.930	269.7	2.967					
2700.0	3.162	34.932	269.3	2.939					
2750.0	3.136	34.934	268.6	2.908					
2800.0	3.118	34.936	267.1	2.886					
2850.0	3.088	34.938	265.3	2.851					
2900.0	3.046	34.940	262.8	2.805					
2950.0	3.015	34.941	261.4	2.769					
3000.0	2.993	34.942	261.4	2.743					

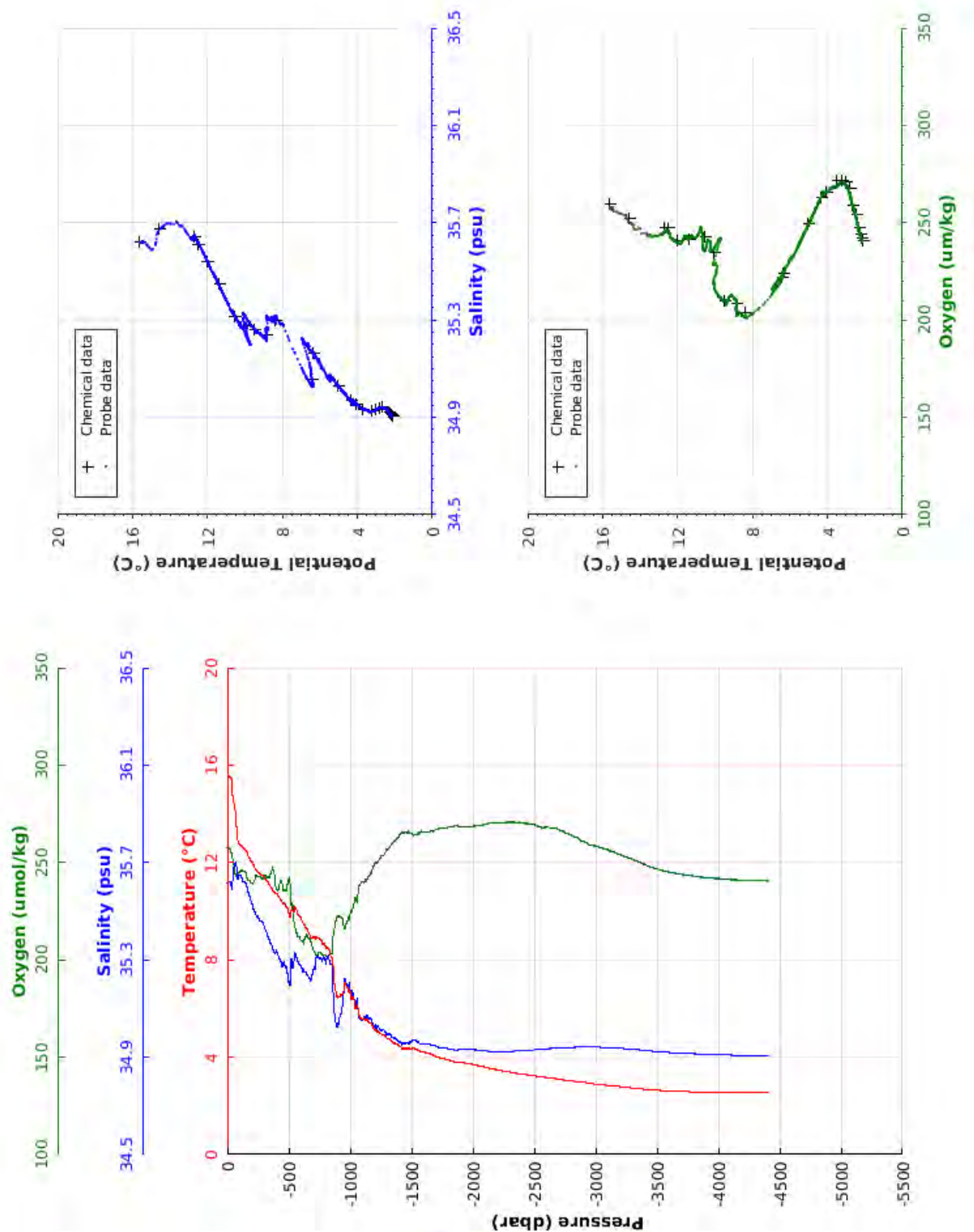


Station: 33

Cruise	: BOCATS 2016			
Station	: 34	Cast	: 1	
Date	: 01/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4348 m	Organism	: CSIC/IIM VIGO	
Position	: N 47 39.75 W 020 33.58			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.613	35.617	257.8	15.612	3050.0	2.865	34.941	257.4	2.612
10.0	15.593	35.618	257.0	15.591	3100.0	2.840	34.940	256.4	2.583
20.0	15.492	35.620	257.7	15.489	3150.0	2.817	34.938	255.4	2.554
30.0	15.478	35.622	256.4	15.473	3200.0	2.790	34.937	254.1	2.523
40.0	14.921	35.592	253.9	14.915	3250.0	2.760	34.935	252.9	2.488
50.0	14.642	35.663	250.4	14.634	3300.0	2.733	34.933	251.8	2.457
100.0	12.747	35.646	244.9	12.733	3350.0	2.708	34.931	250.6	2.427
150.0	12.488	35.614	245.3	12.468	3400.0	2.683	34.928	249.2	2.397
200.0	12.018	35.538	239.5	11.992	3450.0	2.659	34.925	247.8	2.368
250.0	11.636	35.480	242.9	11.604	3500.0	2.638	34.923	246.8	2.342
300.0	11.422	35.443	242.1	11.384	3550.0	2.624	34.921	245.9	2.323
350.0	11.048	35.383	242.4	11.004	3600.0	2.610	34.920	245.1	2.304
400.0	10.718	35.337	237.7	10.669	3650.0	2.598	34.918	244.5	2.287
450.0	10.298	35.272	240.4	10.244	3700.0	2.588	34.917	243.9	2.272
500.0	9.910	35.220	240.4	9.851	3750.0	2.581	34.916	243.5	2.259
550.0	10.172	35.329	218.7	10.106	3800.0	2.571	34.914	243.0	2.243
600.0	9.712	35.276	210.7	9.642	3850.0	2.566	34.913	242.6	2.233
650.0	9.249	35.244	212.4	9.175	3900.0	2.559	34.912	242.4	2.220
700.0	8.952	35.250	206.7	8.873	3950.0	2.555	34.911	242.0	2.211
750.0	8.838	35.304	203.8	8.755	4000.0	2.556	34.911	241.8	2.206
800.0	8.577	35.301	202.3	8.489	4050.0	2.550	34.910	241.5	2.195
850.0	8.092	35.283	203.3	8.002	4100.0	2.547	34.909	241.3	2.186
900.0	6.480	35.034	222.2	6.395	4150.0	2.546	34.908	241.2	2.179
950.0	6.847	35.172	219.0	6.754	4200.0	2.546	34.908	241.0	2.173
1000.0	6.676	35.191	221.6	6.579	4250.0	2.545	34.907	240.7	2.166
1050.0	6.015	35.106	232.4	5.918	4300.0	2.546	34.906	240.7	2.162
1100.0	5.556	35.051	240.1	5.458	4350.0	2.547	34.906	240.8	2.156
1150.0	5.473	35.063	242.4	5.370	4400.0	2.541	34.905	240.6	2.145
1200.0	5.154	35.029	248.4	5.050	4420.0	2.544	34.905	240.6	2.145
1250.0	4.966	35.013	252.3	4.859					
1300.0	4.764	34.993	256.6	4.654					
1350.0	4.621	34.981	259.9	4.507					
1400.0	4.451	34.964	263.3	4.335					
1450.0	4.343	34.955	265.5	4.223					
1500.0	4.343	34.963	265.1	4.219					
1550.0	4.292	34.961	264.7	4.164					
1600.0	4.201	34.955	265.7	4.070					
1650.0	4.139	34.953	265.6	4.003					
1700.0	4.032	34.944	266.8	3.893					
1750.0	3.947	34.938	267.7	3.805					
1800.0	3.890	34.935	268.0	3.743					
1850.0	3.817	34.930	268.5	3.667					
1900.0	3.782	34.932	268.3	3.628					
1950.0	3.750	34.933	268.3	3.591					
2000.0	3.704	34.932	268.6	3.541					
2050.0	3.635	34.929	269.1	3.468					
2100.0	3.592	34.928	269.5	3.421					
2150.0	3.520	34.923	270.4	3.345					
2200.0	3.477	34.924	270.5	3.298					
2250.0	3.436	34.923	270.4	3.253					
2300.0	3.385	34.924	270.8	3.198					
2350.0	3.338	34.925	270.7	3.147					
2400.0	3.305	34.926	270.4	3.110					
2450.0	3.274	34.928	270.1	3.074					
2500.0	3.241	34.930	269.5	3.036					
2550.0	3.196	34.933	268.3	2.987					
2600.0	3.161	34.934	268.2	2.948					
2650.0	3.129	34.936	267.9	2.911					
2700.0	3.098	34.937	266.9	2.876					
2750.0	3.057	34.938	265.5	2.831					
2800.0	3.029	34.940	264.1	2.799					
2850.0	2.996	34.941	262.9	2.761					
2900.0	2.968	34.942	261.0	2.729					
2950.0	2.923	34.942	259.1	2.679					
3000.0	2.890	34.941	258.6	2.641					

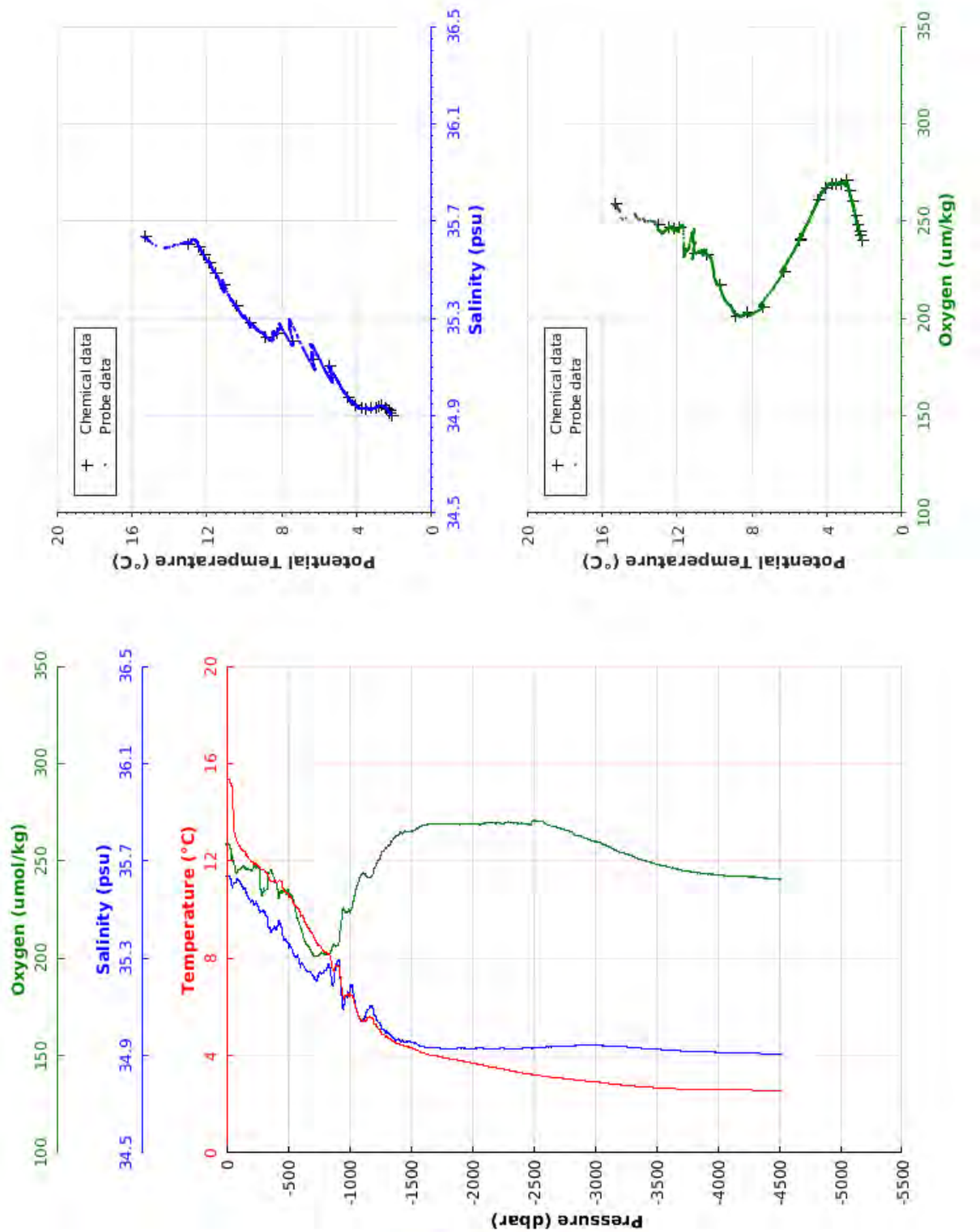




**Station: 34**

Cruise	: BOCATS 2016		
Station	: 35	Cast	: 1
Date	: 01/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 4458 m	Organism	: CSIC/IIM VIGO
Position	: N 48 2.20 W 020 51.11		

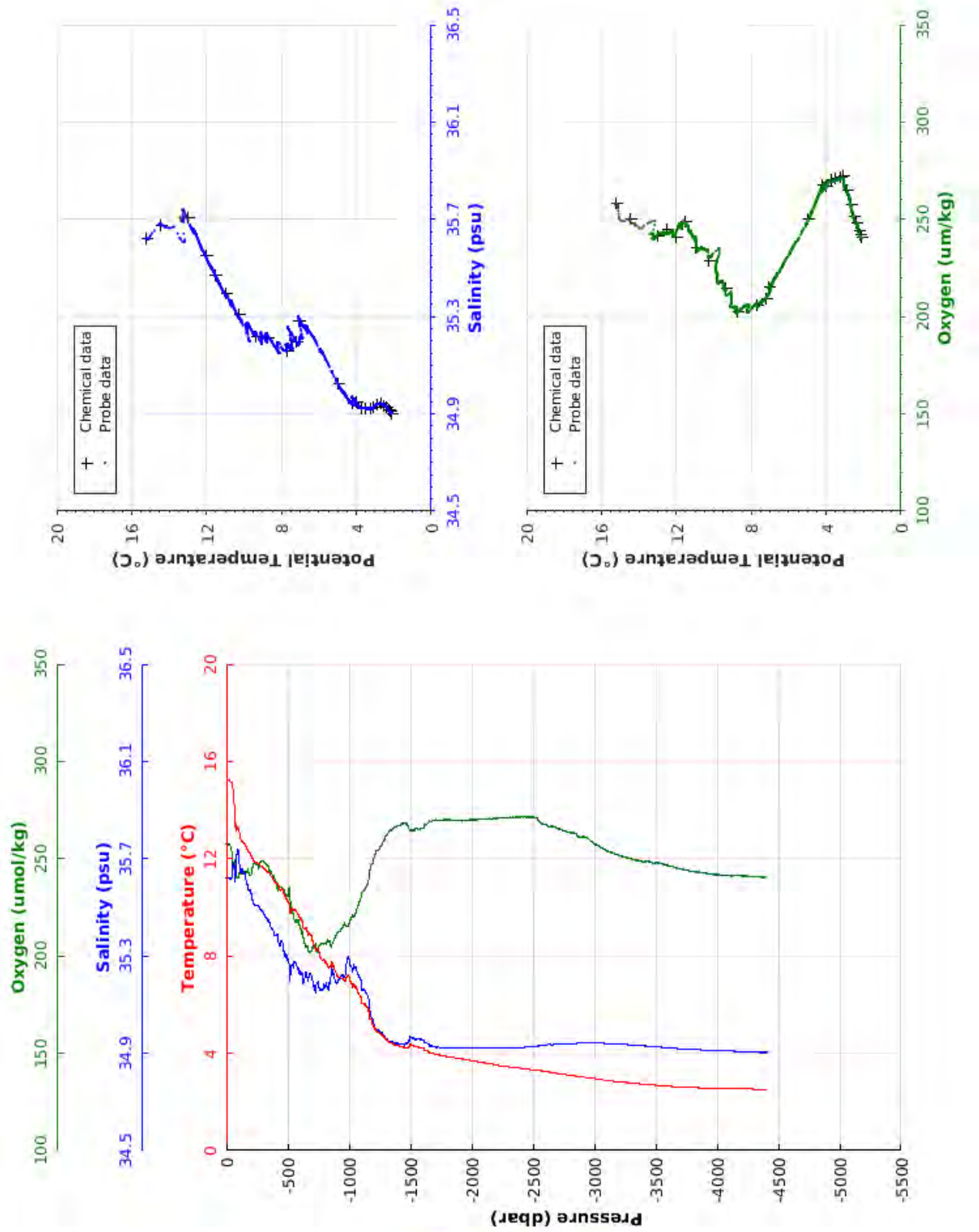
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.366	35.636	258.5	15.366	3050.0	2.891	34.941	259.2	2.637
10.0	15.367	35.636	258.5	15.366	3100.0	2.857	34.940	257.6	2.599
20.0	15.367	35.636	258.2	15.364	3150.0	2.829	34.939	256.2	2.566
30.0	15.210	35.632	258.1	15.205	3200.0	2.797	34.937	254.6	2.530
40.0	15.138	35.619	255.8	15.132	3250.0	2.784	34.936	253.8	2.511
50.0	14.194	35.590	252.1	14.186	3300.0	2.761	34.934	252.8	2.484
100.0	12.623	35.622	245.1	12.609	3350.0	2.725	34.931	251.1	2.443
150.0	12.373	35.588	247.0	12.353	3400.0	2.709	34.930	250.2	2.422
200.0	11.990	35.533	245.7	11.964	3450.0	2.688	34.928	249.3	2.397
250.0	11.836	35.521	247.3	11.803	3500.0	2.672	34.926	248.2	2.375
300.0	11.635	35.496	233.7	11.597	3550.0	2.661	34.924	247.5	2.359
350.0	11.219	35.420	244.1	11.175	3600.0	2.645	34.923	246.9	2.338
400.0	11.163	35.426	238.7	11.113	3650.0	2.640	34.922	246.0	2.327
450.0	11.075	35.429	233.7	11.018	3700.0	2.618	34.919	245.5	2.301
500.0	10.659	35.368	233.9	10.597	3750.0	2.610	34.918	244.8	2.287
550.0	10.212	35.314	229.8	10.146	3800.0	2.604	34.917	244.2	2.276
600.0	9.747	35.265	217.3	9.677	3850.0	2.598	34.916	244.0	2.265
650.0	9.372	35.254	207.5	9.298	3900.0	2.592	34.915	243.4	2.253
700.0	9.008	35.235	202.9	8.929	3950.0	2.592	34.914	243.1	2.247
750.0	8.553	35.234	201.3	8.471	4000.0	2.587	34.914	242.9	2.237
800.0	8.273	35.251	202.0	8.187	4050.0	2.583	34.913	242.5	2.227
850.0	7.952	35.240	203.1	7.862	4100.0	2.584	34.912	242.3	2.222
900.0	7.671	35.281	206.8	7.578	4150.0	2.584	34.912	242.2	2.216
950.0	6.333	35.090	225.0	6.244	4200.0	2.583	34.911	242.0	2.209
1000.0	6.414	35.152	225.2	6.319	4250.0	2.583	34.910	241.8	2.203
1050.0	6.029	35.125	232.4	5.932	4300.0	2.580	34.909	241.7	2.194
1100.0	5.422	35.041	242.7	5.326	4350.0	2.571	34.908	241.3	2.179
1150.0	5.547	35.088	241.6	5.444	4400.0	2.553	34.906	241.0	2.156
1200.0	5.345	35.071	244.9	5.239	4450.0	2.544	34.904	240.7	2.141
1250.0	5.050	35.033	251.1	4.942	4500.0	2.546	34.904	240.7	2.137
1300.0	4.766	34.993	256.9	4.656	4530.0	2.550	34.904	240.7	2.138
1350.0	4.613	34.978	260.1	4.500					
1400.0	4.481	34.964	263.0	4.364					
1450.0	4.374	34.954	265.2	4.254					
1500.0	4.333	34.958	264.9	4.209					
1550.0	4.234	34.949	266.1	4.106					
1600.0	4.112	34.937	268.0	3.982					
1650.0	4.032	34.933	268.9	3.897					
1700.0	3.992	34.932	269.0	3.854					
1750.0	3.935	34.929	269.1	3.793					
1800.0	3.889	34.930	268.9	3.743					
1850.0	3.830	34.929	269.0	3.680					
1900.0	3.805	34.931	268.6	3.650					
1950.0	3.736	34.930	268.9	3.578					
2000.0	3.693	34.929	269.1	3.530					
2050.0	3.653	34.932	268.8	3.486					
2100.0	3.591	34.929	269.3	3.421					
2150.0	3.539	34.927	269.7	3.365					
2200.0	3.489	34.928	269.5	3.310					
2250.0	3.445	34.931	269.0	3.262					
2300.0	3.390	34.928	269.9	3.203					
2350.0	3.342	34.929	269.6	3.151					
2400.0	3.304	34.930	269.4	3.109					
2450.0	3.251	34.931	268.9	3.052					
2500.0	3.202	34.930	270.6	2.999					
2550.0	3.185	34.934	270.4	2.976					
2600.0	3.150	34.935	269.2	2.938					
2650.0	3.104	34.936	267.8	2.887					
2700.0	3.088	34.937	267.2	2.866					
2750.0	3.055	34.938	266.0	2.829					
2800.0	3.030	34.940	265.2	2.799					
2850.0	2.997	34.941	262.9	2.762					
2900.0	2.964	34.942	262.3	2.724					
2950.0	2.941	34.942	260.9	2.697					
3000.0	2.917	34.942	260.0	2.668					



Station: 35

Cruise	: BOCATS 2016			
Station	: 36	Cast	: 1	
Date	: 02/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4334 m	Organism	: CSIC/IIM VIGO	
Position	: N 48 24.60			
	W 021 8.45			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.217	35.621	257.8	15.217	3050.0	2.922	34.941	256.0	2.668
10.0	15.221	35.621	257.7	15.219	3100.0	2.878	34.940	254.4	2.619
20.0	15.219	35.621	257.4	15.216	3150.0	2.853	34.939	253.1	2.589
30.0	15.188	35.619	257.4	15.183	3200.0	2.826	34.938	251.9	2.558
40.0	15.114	35.619	256.5	15.108	3250.0	2.799	34.936	250.8	2.526
50.0	15.080	35.623	251.5	15.072	3300.0	2.775	34.934	249.9	2.497
100.0	13.236	35.735	239.9	13.222	3350.0	2.751	34.932	249.1	2.468
150.0	12.585	35.638	243.2	12.565	3400.0	2.726	34.930	248.3	2.439
200.0	12.157	35.563	241.3	12.130	3450.0	2.707	34.929	248.5	2.415
250.0	11.826	35.507	246.7	11.794	3500.0	2.684	34.927	247.9	2.387
300.0	11.643	35.483	248.6	11.604	3550.0	2.661	34.925	247.4	2.359
350.0	11.414	35.443	245.5	11.369	3600.0	2.642	34.923	246.4	2.335
400.0	11.025	35.386	239.2	10.975	3650.0	2.624	34.920	245.6	2.312
450.0	10.753	35.362	235.5	10.698	3700.0	2.609	34.918	245.0	2.292
500.0	10.250	35.287	230.8	10.190	3750.0	2.597	34.917	244.1	2.275
550.0	9.857	35.252	221.3	9.792	3800.0	2.587	34.916	243.5	2.260
600.0	9.576	35.233	216.1	9.506	3850.0	2.581	34.914	243.0	2.247
650.0	9.184	35.231	205.4	9.111	3900.0	2.574	34.913	242.5	2.235
700.0	8.721	35.210	203.2	8.644	3950.0	2.565	34.912	242.1	2.220
750.0	8.277	35.195	202.2	8.197	4000.0	2.560	34.911	241.7	2.210
800.0	7.767	35.171	206.5	7.684	4050.0	2.556	34.910	241.6	2.200
850.0	7.586	35.205	207.1	7.499	4100.0	2.550	34.909	241.3	2.189
900.0	7.204	35.184	211.0	7.114	4150.0	2.547	34.908	241.4	2.180
950.0	7.069	35.222	214.1	6.974	4200.0	2.542	34.907	241.2	2.169
1000.0	7.136	35.287	215.6	7.036	4250.0	2.541	34.907	241.1	2.162
1050.0	6.729	35.249	221.7	6.626	4300.0	2.525	34.904	240.7	2.141
1100.0	6.250	35.194	229.5	6.146	4350.0	2.519	34.903	240.5	2.130
1150.0	5.878	35.144	235.7	5.772	4400.0	2.525	34.903	240.6	2.129
1200.0	5.109	35.026	248.8	5.006	4409.0	2.527	34.903	240.7	2.129
1250.0	4.842	34.992	254.9	4.736					
1300.0	4.567	34.961	260.9	4.459					
1350.0	4.413	34.948	264.9	4.302					
1400.0	4.308	34.941	266.9	4.193					
1450.0	4.248	34.937	268.1	4.130					
1500.0	4.362	34.970	264.4	4.238					
1550.0	4.251	34.957	265.5	4.123					
1600.0	4.202	34.957	265.7	4.071					
1650.0	4.052	34.936	268.6	3.918					
1700.0	3.971	34.927	269.8	3.832					
1750.0	3.910	34.924	269.9	3.768					
1800.0	3.866	34.923	270.0	3.720					
1850.0	3.834	34.923	269.8	3.684					
1900.0	3.784	34.924	269.6	3.629					
1950.0	3.745	34.924	269.6	3.586					
2000.0	3.704	34.923	269.9	3.541					
2050.0	3.651	34.923	270.3	3.484					
2100.0	3.604	34.922	270.5	3.433					
2150.0	3.568	34.922	270.7	3.392					
2200.0	3.517	34.921	270.6	3.337					
2250.0	3.476	34.921	270.9	3.292					
2300.0	3.443	34.921	271.0	3.255					
2350.0	3.411	34.922	271.3	3.219					
2400.0	3.382	34.923	271.4	3.185					
2450.0	3.352	34.925	271.3	3.151					
2500.0	3.318	34.927	271.3	3.112					
2550.0	3.288	34.931	269.5	3.078					
2600.0	3.249	34.933	267.8	3.035					
2650.0	3.212	34.935	266.5	2.993					
2700.0	3.173	34.937	265.6	2.949					
2750.0	3.140	34.938	264.5	2.912					
2800.0	3.090	34.939	263.4	2.858					
2850.0	3.057	34.940	262.8	2.821					
2900.0	3.020	34.942	261.2	2.779					
2950.0	2.995	34.943	260.3	2.749					
3000.0	2.958	34.942	258.0	2.708					

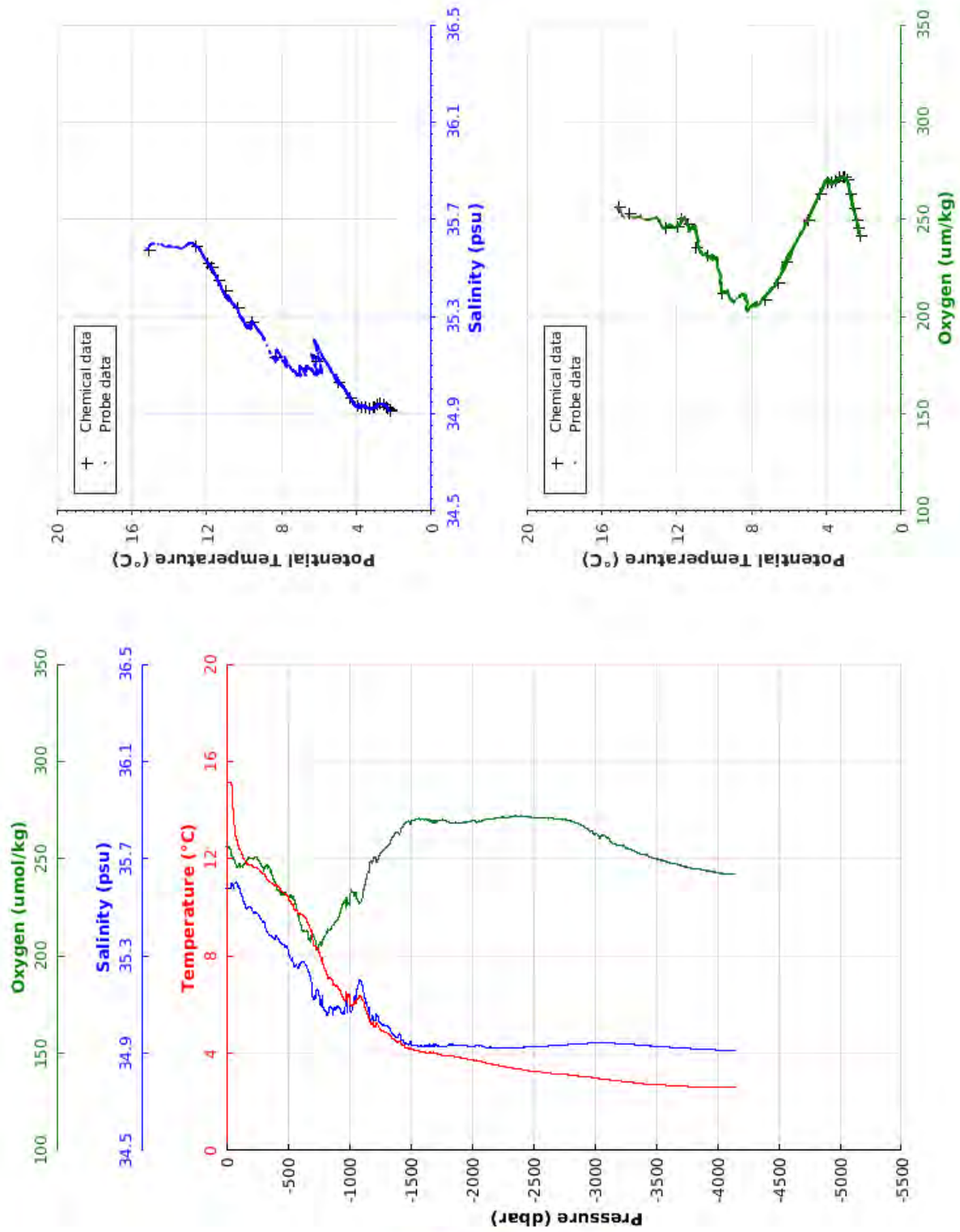


Station: 36



Cruise	: BOCATS 2016			
Station	: 37	Cast	: 1	
Date	: 03/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4089 m	Organism	: CSIC/IIM VIGO	
Position	: N 48 47.23 W 021 25.97			

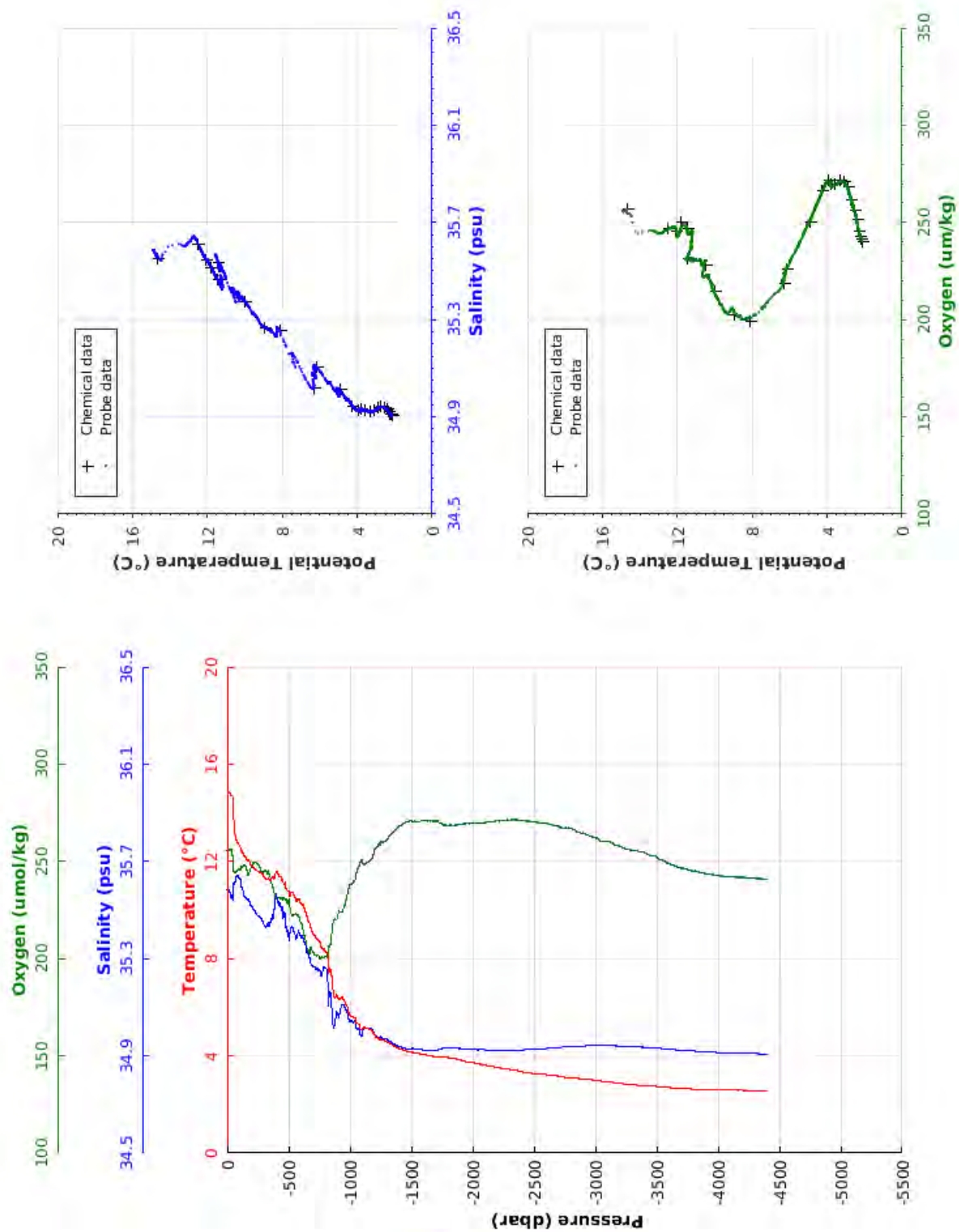
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.146	35.579	256.3	15.145	3050.0	2.944	34.942	260.9	2.690
10.0	15.146	35.579	256.3	15.145	3100.0	2.916	34.942	261.2	2.656
20.0	15.145	35.579	256.0	15.141	3150.0	2.891	34.941	257.9	2.627
30.0	15.146	35.579	256.0	15.141	3200.0	2.869	34.940	256.7	2.600
40.0	15.028	35.594	254.9	15.022	3250.0	2.839	34.939	255.9	2.565
50.0	14.345	35.594	251.1	14.338	3300.0	2.803	34.937	254.7	2.525
100.0	12.511	35.586	246.3	12.497	3350.0	2.769	34.935	253.0	2.486
150.0	11.914	35.514	246.9	11.895	3400.0	2.740	34.932	252.3	2.453
200.0	11.746	35.500	250.3	11.720	3450.0	2.718	34.930	251.0	2.425
250.0	11.610	35.478	250.7	11.578	3500.0	2.706	34.929	250.1	2.409
300.0	11.369	35.436	245.6	11.331	3550.0	2.694	34.927	249.0	2.391
350.0	11.033	35.383	246.3	10.989	3600.0	2.679	34.926	248.4	2.371
400.0	10.946	35.386	238.1	10.896	3650.0	2.666	34.924	247.4	2.353
450.0	10.660	35.352	231.8	10.605	3700.0	2.650	34.922	246.5	2.332
500.0	10.437	35.333	231.0	10.376	3750.0	2.637	34.921	245.9	2.313
550.0	10.005	35.266	230.0	9.940	3800.0	2.620	34.919	244.8	2.292
600.0	9.723	35.263	217.7	9.653	3850.0	2.621	34.918	244.6	2.287
650.0	9.541	35.268	212.3	9.465	3900.0	2.613	34.917	244.0	2.273
700.0	8.705	35.156	210.4	8.628	3950.0	2.599	34.915	243.4	2.254
750.0	8.274	35.156	203.3	8.194	4000.0	2.587	34.913	242.8	2.237
800.0	7.472	35.078	209.1	7.391	4050.0	2.587	34.913	242.3	2.230
850.0	7.102	35.094	213.6	7.018	4100.0	2.587	34.912	242.0	2.225
900.0	6.761	35.088	217.7	6.674	4150.0	2.594	34.912	242.1	2.225
950.0	6.265	35.064	226.3	6.176	4152.0	2.594	34.912	242.3	2.225
1000.0	6.351	35.135	227.1	6.257					
1050.0	6.140	35.135	230.7	6.043					
1100.0	6.318	35.197	227.6	6.213					
1150.0	5.577	35.095	240.8	5.474					
1200.0	5.094	35.028	250.4	4.990					
1250.0	5.013	35.030	251.6	4.906					
1300.0	4.861	35.014	255.2	4.750					
1350.0	4.601	34.983	260.5	4.488					
1400.0	4.474	34.970	263.4	4.358					
1450.0	4.274	34.943	267.4	4.156					
1500.0	4.235	34.946	268.1	4.112					
1550.0	4.106	34.932	270.2	3.981					
1600.0	4.049	34.929	270.4	3.919					
1650.0	4.043	34.935	269.5	3.908					
1700.0	4.032	34.939	268.6	3.893					
1750.0	3.932	34.929	269.6	3.790					
1800.0	3.896	34.930	269.2	3.749					
1850.0	3.874	34.935	268.4	3.723					
1900.0	3.826	34.933	268.5	3.671					
1950.0	3.791	34.932	268.7	3.631					
2000.0	3.728	34.928	269.1	3.565					
2050.0	3.694	34.931	268.9	3.526					
2100.0	3.615	34.926	270.0	3.443					
2150.0	3.566	34.925	270.2	3.390					
2200.0	3.509	34.923	270.9	3.329					
2250.0	3.468	34.922	271.3	3.284					
2300.0	3.418	34.923	271.1	3.231					
2350.0	3.375	34.923	271.8	3.184					
2400.0	3.336	34.924	271.8	3.140					
2450.0	3.286	34.925	271.6	3.086					
2500.0	3.258	34.927	271.2	3.053					
2550.0	3.231	34.927	271.2	3.022					
2600.0	3.198	34.929	270.9	2.984					
2650.0	3.170	34.931	270.9	2.952					
2700.0	3.148	34.933	270.6	2.925					
2750.0	3.133	34.934	270.1	2.906					
2800.0	3.106	34.937	269.6	2.874					
2850.0	3.073	34.938	268.3	2.836					
2900.0	3.047	34.940	267.2	2.805					
2950.0	3.021	34.941	264.7	2.775					
3000.0	2.991	34.942	262.5	2.740					



Station: 37

Cruise	: BOCATS 2016		
Station	: 38	Cast	: 1
Date	: 03/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 4340 m	Organism	: CSIC/IIM VIGO
Position	: N 49 9.48 W 021 43.58		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	14.886	35.586	255.9	14.886	3050.0	2.957	34.942	260.5	2.702
10.0	14.888	35.586	256.0	14.887	3100.0	2.938	34.942	260.1	2.678
20.0	14.825	35.577	255.7	14.822	3150.0	2.893	34.941	259.3	2.628
30.0	14.742	35.561	255.9	14.738	3200.0	2.865	34.940	258.0	2.596
40.0	14.690	35.557	256.2	14.684	3250.0	2.839	34.939	256.5	2.565
50.0	14.402	35.568	249.9	14.395	3300.0	2.807	34.937	255.8	2.529
100.0	12.626	35.630	246.1	12.612	3350.0	2.793	34.936	255.2	2.510
150.0	12.175	35.557	247.6	12.155	3400.0	2.778	34.935	254.4	2.490
200.0	11.818	35.516	247.6	11.792	3450.0	2.756	34.933	253.1	2.462
250.0	11.585	35.477	248.7	11.553	3500.0	2.741	34.932	252.5	2.442
300.0	11.362	35.442	244.4	11.324	3550.0	2.721	34.930	250.5	2.418
350.0	11.278	35.450	243.1	11.234	3600.0	2.695	34.927	249.0	2.387
400.0	11.601	35.564	230.9	11.549	3650.0	2.676	34.925	247.7	2.362
450.0	11.234	35.500	231.2	11.177	3700.0	2.657	34.923	246.6	2.338
500.0	10.756	35.415	228.0	10.694	3750.0	2.642	34.921	245.8	2.318
550.0	10.532	35.406	222.5	10.464	3800.0	2.632	34.920	245.1	2.302
600.0	10.288	35.394	219.1	10.215	3850.0	2.617	34.918	244.4	2.283
650.0	9.698	35.328	207.8	9.622	3900.0	2.605	34.916	243.6	2.265
700.0	9.033	35.270	203.5	8.955	3950.0	2.597	34.915	243.2	2.251
750.0	8.688	35.250	201.6	8.605	4000.0	2.590	34.914	242.6	2.239
800.0	8.299	35.262	200.7	8.213	4050.0	2.586	34.913	242.4	2.229
850.0	7.276	35.126	208.9	7.191	4100.0	2.582	34.912	242.1	2.220
900.0	6.461	35.076	220.6	6.376	4150.0	2.583	34.911	241.8	2.215
950.0	6.304	35.108	225.5	6.215	4200.0	2.582	34.911	241.7	2.209
1000.0	5.646	35.039	237.5	5.557	4250.0	2.577	34.910	241.6	2.198
1050.0	5.429	35.024	242.0	5.337	4300.0	2.578	34.909	241.4	2.193
1100.0	5.070	34.984	250.6	4.976	4350.0	2.573	34.908	241.2	2.182
1150.0	5.118	35.015	249.4	5.019	4400.0	2.561	34.907	240.9	2.164
1200.0	4.878	34.993	254.2	4.776	4411.0	2.557	34.906	240.9	2.158
1250.0	4.710	34.979	258.4	4.606					
1300.0	4.585	34.969	260.9	4.477					
1350.0	4.433	34.952	264.5	4.322					
1400.0	4.308	34.938	267.7	4.193					
1450.0	4.214	34.931	269.8	4.096					
1500.0	4.139	34.925	271.2	4.018					
1550.0	4.116	34.929	270.3	3.990					
1600.0	4.047	34.925	270.9	3.917					
1650.0	4.003	34.923	270.8	3.869					
1700.0	3.964	34.923	270.9	3.826					
1750.0	3.961	34.930	269.4	3.819					
1800.0	3.941	34.933	268.5	3.793					
1850.0	3.893	34.933	268.4	3.742					
1900.0	3.836	34.930	268.8	3.681					
1950.0	3.752	34.926	269.6	3.593					
2000.0	3.718	34.927	269.4	3.555					
2050.0	3.663	34.925	269.7	3.496					
2100.0	3.619	34.925	269.9	3.448					
2150.0	3.578	34.923	270.4	3.402					
2200.0	3.520	34.922	270.8	3.341					
2250.0	3.476	34.922	271.1	3.292					
2300.0	3.442	34.922	271.2	3.254					
2350.0	3.403	34.922	271.4	3.211					
2400.0	3.344	34.924	271.0	3.148					
2450.0	3.307	34.925	270.7	3.107					
2500.0	3.279	34.927	270.4	3.074					
2550.0	3.250	34.929	269.7	3.040					
2600.0	3.225	34.930	269.6	3.011					
2650.0	3.192	34.932	269.0	2.973					
2700.0	3.161	34.934	268.4	2.938					
2750.0	3.125	34.936	267.2	2.897					
2800.0	3.096	34.938	267.1	2.864					
2850.0	3.073	34.939	265.2	2.836					
2900.0	3.050	34.940	264.4	2.809					
2950.0	3.019	34.941	263.2	2.773					
3000.0	2.988	34.942	262.3	2.737					

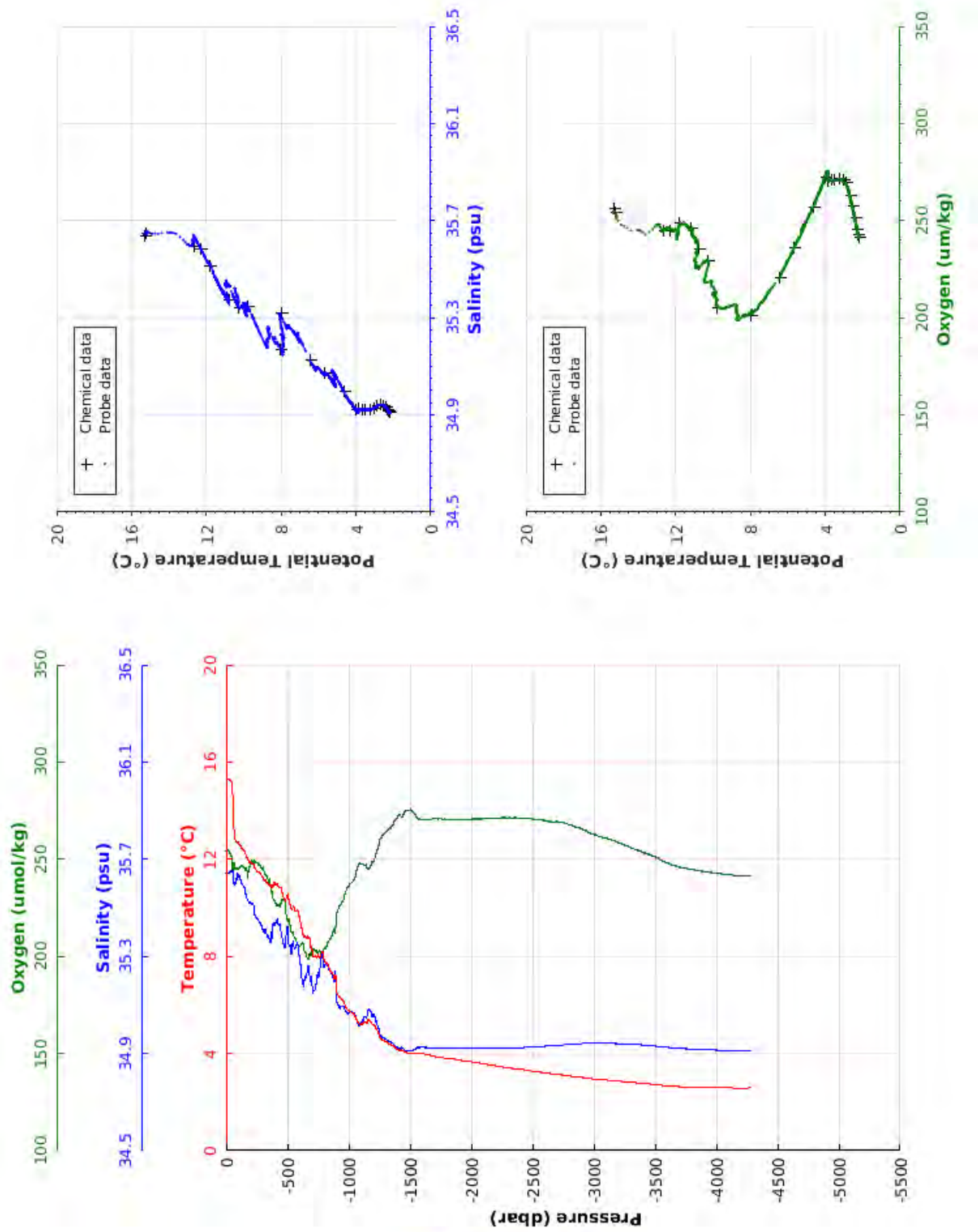


**Station: 38**

Cruise	: BOCATS 2016			
Station	: 39	Cast	: 1	
Date	: 03/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4227 m	Organism	: CSIC/IIM VIGO	
Position	: N 49 32.07			
	W 022 1.08			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.321	35.644	254.5	15.320	3050.0	2.922	34.942	261.7	2.667
10.0	15.320	35.644	254.6	15.318	3100.0	2.906	34.942	260.9	2.647
20.0	15.300	35.643	254.4	15.297	3150.0	2.887	34.942	259.9	2.623
30.0	15.232	35.645	254.0	15.227	3200.0	2.858	34.941	258.5	2.589
40.0	15.200	35.652	252.8	15.194	3250.0	2.835	34.939	257.3	2.562
50.0	15.130	35.653	251.5	15.122	3300.0	2.815	34.938	256.3	2.537
100.0	12.674	35.635	245.3	12.660	3350.0	2.794	34.936	254.9	2.510
150.0	12.322	35.585	246.2	12.302	3400.0	2.770	34.935	253.8	2.482
200.0	11.842	35.519	247.1	11.816	3450.0	2.747	34.933	252.5	2.454
250.0	11.505	35.457	248.2	11.473	3500.0	2.725	34.931	251.3	2.427
300.0	11.231	35.415	244.9	11.193	3550.0	2.697	34.928	249.6	2.394
350.0	10.976	35.382	238.9	10.933	3600.0	2.670	34.925	248.1	2.363
400.0	10.958	35.431	228.7	10.909	3650.0	2.644	34.922	247.0	2.332
450.0	10.728	35.409	226.7	10.672	3700.0	2.632	34.921	246.1	2.314
500.0	10.520	35.413	220.1	10.459	3750.0	2.622	34.919	245.3	2.299
550.0	10.069	35.362	212.0	10.003	3800.0	2.617	34.918	244.8	2.288
600.0	9.582	35.301	204.8	9.512	3850.0	2.611	34.917	244.2	2.276
650.0	8.798	35.216	202.4	8.726	3900.0	2.603	34.916	243.6	2.263
700.0	8.280	35.196	201.5	8.205	3950.0	2.598	34.915	243.3	2.253
750.0	8.077	35.230	201.7	7.997	4000.0	2.592	34.914	242.7	2.241
800.0	7.805	35.258	203.9	7.722	4050.0	2.588	34.913	242.5	2.231
850.0	7.414	35.241	208.7	7.328	4100.0	2.589	34.913	242.1	2.226
900.0	6.898	35.183	215.8	6.810	4150.0	2.579	34.911	241.8	2.211
950.0	6.203	35.096	227.3	6.115	4200.0	2.579	34.911	241.6	2.205
1000.0	5.754	35.067	236.2	5.664	4250.0	2.580	34.910	241.4	2.200
1050.0	5.571	35.063	239.8	5.477	4297.0	2.584	34.910	241.6	2.199
1100.0	5.219	35.026	247.8	5.124					
1150.0	5.253	35.048	247.6	5.153					
1200.0	5.211	35.064	248.3	5.106					
1250.0	4.757	34.996	257.0	4.651					
1300.0	4.490	34.961	263.4	4.383					
1350.0	4.354	34.948	266.3	4.244					
1400.0	4.184	34.927	271.1	4.071					
1450.0	4.081	34.917	272.9	3.965					
1500.0	4.016	34.913	275.0	3.895					
1550.0	4.002	34.920	272.7	3.877					
1600.0	3.988	34.925	270.5	3.859					
1650.0	3.944	34.924	270.4	3.811					
1700.0	3.881	34.922	270.9	3.744					
1750.0	3.840	34.922	270.8	3.699					
1800.0	3.803	34.922	270.6	3.657					
1850.0	3.773	34.922	270.5	3.623					
1900.0	3.731	34.922	270.5	3.578					
1950.0	3.693	34.922	270.4	3.535					
2000.0	3.656	34.922	270.6	3.494					
2050.0	3.621	34.922	270.8	3.455					
2100.0	3.580	34.922	270.7	3.410					
2150.0	3.529	34.922	271.1	3.354					
2200.0	3.497	34.922	270.9	3.318					
2250.0	3.448	34.922	271.2	3.264					
2300.0	3.411	34.922	271.3	3.224					
2350.0	3.375	34.923	271.3	3.183					
2400.0	3.357	34.924	270.9	3.161					
2450.0	3.310	34.925	271.0	3.110					
2500.0	3.274	34.926	270.8	3.069					
2550.0	3.238	34.929	270.3	3.028					
2600.0	3.206	34.930	270.0	2.992					
2650.0	3.164	34.933	269.4	2.946					
2700.0	3.136	34.934	269.3	2.913					
2750.0	3.116	34.935	268.9	2.888					
2800.0	3.080	34.938	267.8	2.849					
2850.0	3.043	34.939	266.7	2.807					
2900.0	3.015	34.941	265.8	2.774					
2950.0	2.978	34.942	264.2	2.732					
3000.0	2.945	34.942	263.0	2.696					

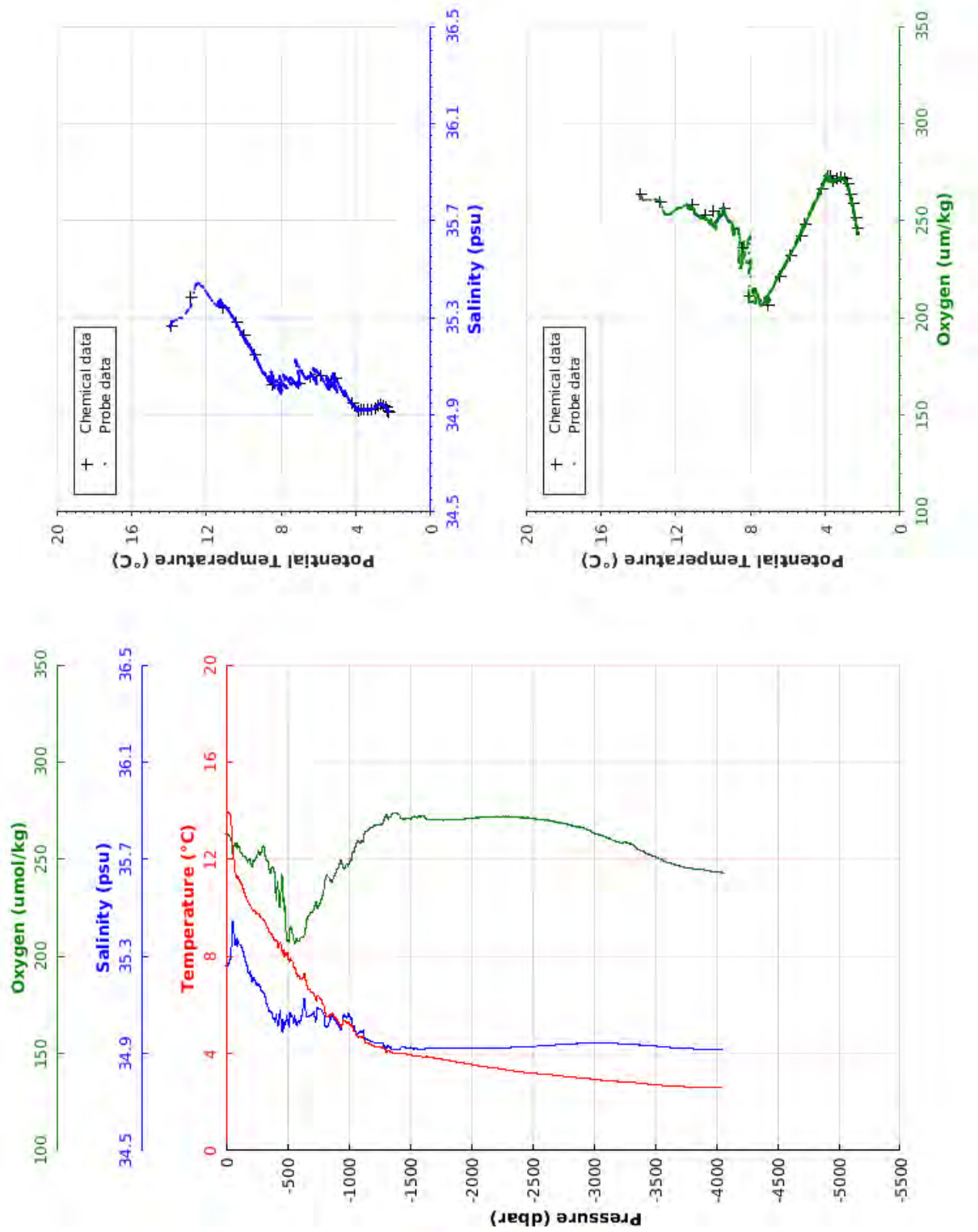




Station: 39

Cruise	: BOCATS 2016			
Station	: 40	Cast	: 1	
Date	: 03/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4000 m	Organism	: CSIC/IIM VIGO	
Position	: N 49 54.24 W 022 18.75			

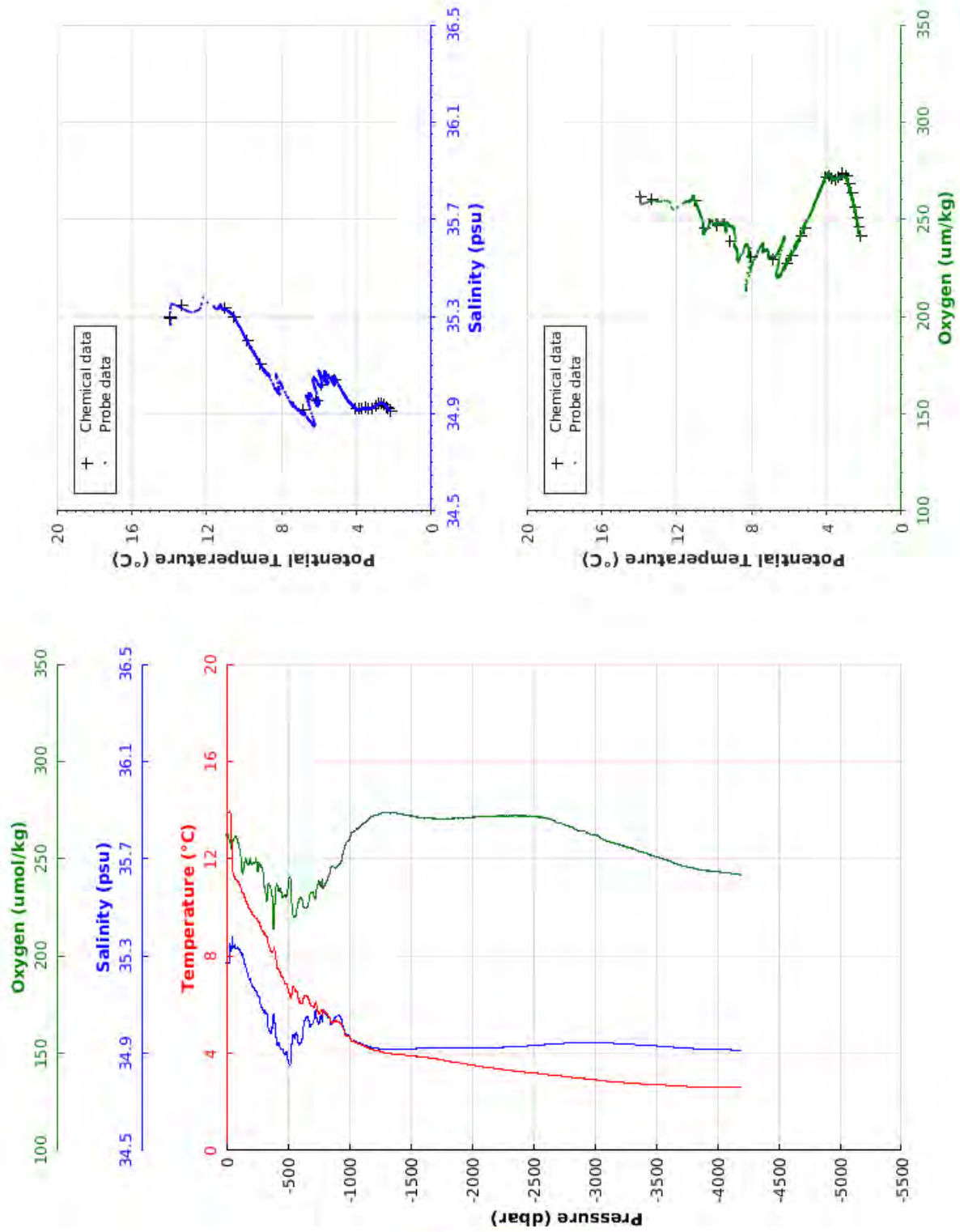
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.933	35.263	262.8	13.933	3050.0	2.908	34.944	262.6	2.654
10.0	13.934	35.263	262.4	13.933	3100.0	2.891	34.943	261.5	2.632
20.0	13.921	35.266	262.6	13.918	3150.0	2.866	34.942	260.1	2.603
30.0	13.846	35.284	262.4	13.841	3200.0	2.842	34.941	259.1	2.574
40.0	13.739	35.287	260.5	13.733	3250.0	2.831	34.940	258.6	2.557
50.0	12.730	35.383	256.9	12.723	3300.0	2.820	34.939	257.9	2.542
100.0	11.217	35.365	256.0	11.205	3350.0	2.787	34.937	255.8	2.503
150.0	10.638	35.305	251.6	10.620	3400.0	2.762	34.935	254.1	2.474
200.0	10.131	35.238	248.9	10.108	3450.0	2.736	34.932	252.5	2.443
250.0	9.786	35.191	250.6	9.757	3500.0	2.719	34.931	251.5	2.421
300.0	9.510	35.155	255.5	9.476	3550.0	2.695	34.928	249.8	2.392
350.0	8.984	35.070	247.4	8.946	3600.0	2.669	34.925	248.3	2.362
400.0	8.662	35.038	243.3	8.619	3650.0	2.657	34.924	247.3	2.344
450.0	8.413	35.045	230.7	8.365	3700.0	2.650	34.923	246.7	2.332
500.0	8.149	35.058	208.7	8.096	3750.0	2.633	34.920	245.6	2.310
550.0	7.623	35.035	210.1	7.568	3800.0	2.629	34.919	245.3	2.300
600.0	7.137	35.033	207.7	7.078	3850.0	2.629	34.919	244.9	2.295
650.0	6.997	35.082	213.6	6.934	3900.0	2.623	34.918	244.3	2.283
700.0	6.506	35.060	222.5	6.441	3950.0	2.619	34.917	243.8	2.273
750.0	6.360	35.089	225.0	6.291	4000.0	2.614	34.916	243.5	2.263
800.0	5.937	35.059	232.8	5.865	4050.0	2.611	34.915	243.0	2.254
850.0	5.595	35.039	239.6	5.520	4061.0	2.612	34.915	243.2	2.253
900.0	5.413	35.035	243.0	5.335					
950.0	5.199	35.024	248.5	5.118					
1000.0	5.310	35.068	246.3	5.223					
1050.0	4.927	35.013	254.0	4.839					
1100.0	4.713	34.993	258.4	4.623					
1150.0	4.426	34.957	264.6	4.333					
1200.0	4.320	34.947	266.7	4.224					
1250.0	4.270	34.945	267.5	4.170					
1300.0	4.123	34.927	271.1	4.019					
1350.0	4.046	34.920	272.4	3.938					
1400.0	4.004	34.918	273.5	3.893					
1450.0	4.006	34.926	270.6	3.890					
1500.0	3.966	34.924	271.1	3.846					
1550.0	3.908	34.921	271.8	3.784					
1600.0	3.864	34.918	272.3	3.736					
1650.0	3.860	34.924	270.2	3.728					
1700.0	3.816	34.923	270.2	3.679					
1750.0	3.778	34.923	270.2	3.638					
1800.0	3.730	34.923	270.1	3.585					
1850.0	3.686	34.922	270.3	3.537					
1900.0	3.635	34.922	270.6	3.482					
1950.0	3.598	34.922	270.7	3.441					
2000.0	3.558	34.922	270.9	3.397					
2050.0	3.504	34.922	271.3	3.339					
2100.0	3.470	34.922	271.5	3.301					
2150.0	3.430	34.922	271.7	3.256					
2200.0	3.397	34.922	271.9	3.219					
2250.0	3.354	34.923	271.9	3.172					
2300.0	3.319	34.924	271.9	3.133					
2350.0	3.276	34.926	272.0	3.086					
2400.0	3.243	34.926	271.4	3.049					
2450.0	3.220	34.928	271.3	3.021					
2500.0	3.194	34.929	270.9	2.991					
2550.0	3.167	34.930	270.4	2.959					
2600.0	3.138	34.933	270.2	2.926					
2650.0	3.124	34.934	269.8	2.906					
2700.0	3.094	34.936	269.2	2.872					
2750.0	3.068	34.938	268.6	2.841					
2800.0	3.041	34.939	267.6	2.810					
2850.0	3.017	34.940	267.1	2.781					
2900.0	2.995	34.942	266.4	2.755					
2950.0	2.963	34.943	265.2	2.719					
3000.0	2.931	34.943	263.5	2.682					



Station: 40

Cruise	: BOCATS 2016			
Station	: 41	Cast	: 1	
Date	: 04/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 4130 m	Organism	: CSIC/IIM VIGO	
Position	: N 50 16.94 W 022 36.50			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.917	35.270	262.0	13.917	3050.0	2.878	34.943	260.6	2.624
10.0	13.920	35.270	261.7	13.918	3100.0	2.850	34.942	259.1	2.592
20.0	13.920	35.269	262.0	13.917	3150.0	2.831	34.941	258.3	2.568
30.0	13.919	35.344	258.6	13.915	3200.0	2.813	34.940	257.3	2.545
40.0	13.026	35.323	259.3	13.021	3250.0	2.790	34.938	256.3	2.517
50.0	11.637	35.342	258.3	11.631	3300.0	2.769	34.936	255.5	2.491
100.0	10.999	35.331	258.7	10.986	3350.0	2.752	34.935	254.2	2.470
150.0	10.382	35.274	245.1	10.364	3400.0	2.735	34.933	253.2	2.447
200.0	9.887	35.205	249.6	9.864	3450.0	2.720	34.931	252.2	2.427
250.0	9.478	35.148	248.3	9.449	3500.0	2.708	34.930	251.0	2.411
300.0	8.978	35.078	245.6	8.945	3550.0	2.695	34.929	250.1	2.392
350.0	8.344	35.000	237.1	8.308	3600.0	2.680	34.927	249.1	2.372
400.0	8.016	35.014	226.9	7.975	3650.0	2.661	34.924	247.8	2.348
450.0	7.161	34.916	232.9	7.118	3700.0	2.647	34.922	246.7	2.329
500.0	6.655	34.882	232.5	6.608	3750.0	2.635	34.921	245.9	2.312
550.0	6.699	34.974	220.3	6.647	3800.0	2.629	34.920	245.4	2.300
600.0	6.112	34.943	229.5	6.058	3850.0	2.619	34.918	244.5	2.284
650.0	6.354	35.044	224.8	6.295	3900.0	2.615	34.917	244.1	2.275
700.0	5.939	35.018	232.5	5.876	3950.0	2.612	34.916	243.7	2.266
750.0	5.717	35.031	236.5	5.651	4000.0	2.609	34.915	243.3	2.258
800.0	5.721	35.068	235.4	5.651	4050.0	2.610	34.915	243.0	2.253
850.0	5.345	35.028	243.5	5.272	4100.0	2.608	34.914	242.7	2.245
900.0	5.305	35.048	245.7	5.228	4150.0	2.602	34.913	242.1	2.234
950.0	4.982	35.011	251.8	4.903	4197.0	2.601	34.912	241.7	2.227
1000.0	4.679	34.973	259.0	4.597					
1050.0	4.455	34.948	264.4	4.371					
1100.0	4.344	34.940	266.7	4.257					
1150.0	4.228	34.929	269.8	4.137					
1200.0	4.129	34.921	272.0	4.034					
1250.0	4.084	34.919	272.8	3.985					
1300.0	4.024	34.915	273.9	3.921					
1350.0	3.977	34.915	273.6	3.871					
1400.0	3.947	34.917	273.1	3.836					
1450.0	3.933	34.918	272.4	3.818					
1500.0	3.900	34.918	272.1	3.781					
1550.0	3.870	34.920	271.7	3.747					
1600.0	3.857	34.922	270.7	3.729					
1650.0	3.812	34.921	270.9	3.681					
1700.0	3.775	34.922	270.7	3.639					
1750.0	3.731	34.923	270.3	3.591					
1800.0	3.680	34.923	270.6	3.536					
1850.0	3.643	34.923	270.6	3.495					
1900.0	3.603	34.923	270.8	3.451					
1950.0	3.566	34.923	271.0	3.410					
2000.0	3.521	34.922	271.4	3.361					
2050.0	3.483	34.923	271.6	3.318					
2100.0	3.436	34.923	271.7	3.268					
2150.0	3.407	34.923	272.0	3.234					
2200.0	3.373	34.924	271.9	3.195					
2250.0	3.329	34.924	271.9	3.148					
2300.0	3.301	34.926	271.9	3.115					
2350.0	3.263	34.927	272.2	3.073					
2400.0	3.240	34.928	272.1	3.045					
2450.0	3.215	34.930	271.9	3.016					
2500.0	3.192	34.931	271.8	2.988					
2550.0	3.166	34.933	271.4	2.958					
2600.0	3.135	34.936	271.1	2.923					
2650.0	3.102	34.938	270.1	2.885					
2700.0	3.081	34.939	268.4	2.860					
2750.0	3.050	34.941	267.7	2.824					
2800.0	3.024	34.942	266.7	2.793					
2850.0	2.984	34.943	264.9	2.749					
2900.0	2.963	34.944	264.2	2.724					
2950.0	2.931	34.944	263.1	2.687					
3000.0	2.908	34.944	262.2	2.659					

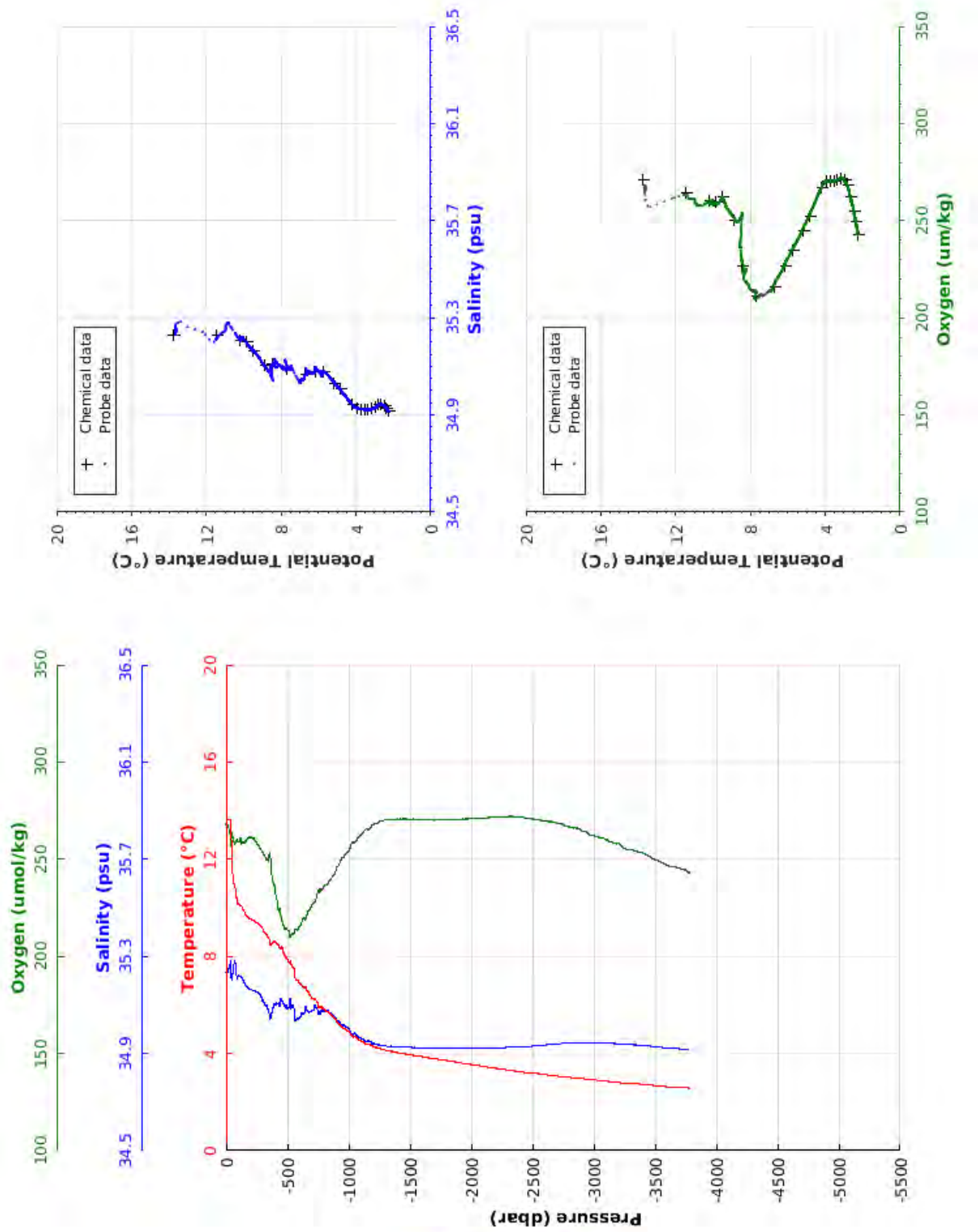


Station: 41



Cruise	: BOCATS 2016			
Station	: 42	Cast	: 1	
Date	: 04/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3733 m	Organism	: CSIC/IIM VIGO	
Position	: N 50 38.76 W 022 53.97			

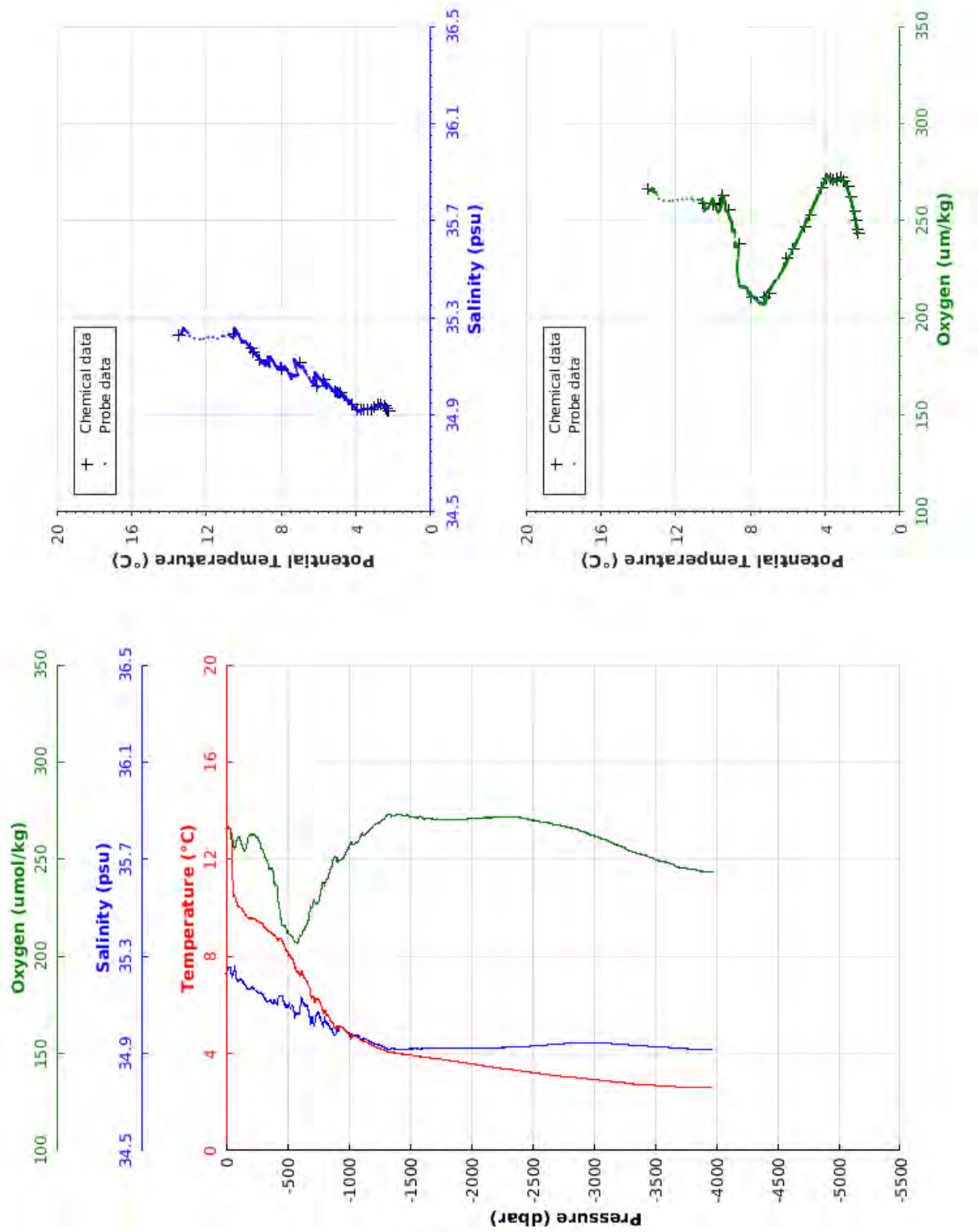
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.654	35.233	267.7	13.654	3050.0	2.887	34.943	261.2	2.633
10.0	13.652	35.234	267.6	13.650	3100.0	2.858	34.943	260.1	2.600
20.0	13.649	35.236	267.4	13.646	3150.0	2.830	34.941	258.7	2.568
30.0	13.639	35.256	265.7	13.634	3200.0	2.813	34.941	258.1	2.545
40.0	13.510	35.280	257.6	13.505	3250.0	2.770	34.937	255.5	2.498
50.0	11.462	35.214	263.2	11.456	3300.0	2.766	34.936	254.9	2.489
100.0	10.170	35.220	258.8	10.159	3350.0	2.754	34.935	254.2	2.471
150.0	9.816	35.192	258.5	9.799	3400.0	2.738	34.934	253.2	2.451
200.0	9.533	35.165	261.7	9.510	3450.0	2.714	34.931	251.8	2.421
250.0	9.384	35.153	258.7	9.356	3500.0	2.682	34.928	249.8	2.385
300.0	9.080	35.117	254.3	9.047	3550.0	2.662	34.925	248.5	2.360
350.0	8.720	35.080	249.2	8.682	3600.0	2.631	34.922	246.7	2.324
400.0	8.577	35.098	236.5	8.534	3650.0	2.628	34.921	246.1	2.316
450.0	8.397	35.127	221.8	8.349	3700.0	2.614	34.919	245.3	2.296
500.0	7.871	35.091	214.0	7.819	3750.0	2.599	34.917	244.1	2.276
550.0	7.525	35.102	211.5	7.470	3788.0	2.580	34.915	243.2	2.253
600.0	6.855	35.047	215.1	6.798					
650.0	6.765	35.093	218.8	6.703					
700.0	6.285	35.075	226.1	6.220					
750.0	6.008	35.073	231.9	5.940					
800.0	5.811	35.073	235.7	5.740					
850.0	5.602	35.067	239.2	5.528					
900.0	5.338	35.040	244.2	5.260					
950.0	5.027	35.011	250.9	4.947					
1000.0	4.913	35.005	253.5	4.829					
1050.0	4.703	34.985	258.4	4.617					
1100.0	4.529	34.965	262.1	4.440					
1150.0	4.385	34.950	265.7	4.293					
1200.0	4.289	34.942	267.7	4.193					
1250.0	4.202	34.935	269.2	4.102					
1300.0	4.134	34.931	270.2	4.031					
1350.0	4.087	34.930	270.4	3.979					
1400.0	4.030	34.927	270.7	3.919					
1450.0	3.986	34.926	270.7	3.871					
1500.0	3.949	34.925	270.4	3.830					
1550.0	3.900	34.924	270.5	3.777					
1600.0	3.870	34.924	270.3	3.743					
1650.0	3.823	34.923	270.3	3.692					
1700.0	3.790	34.924	270.2	3.654					
1750.0	3.746	34.923	270.3	3.606					
1800.0	3.709	34.923	270.2	3.565					
1850.0	3.669	34.923	270.4	3.521					
1900.0	3.622	34.922	270.5	3.470					
1950.0	3.579	34.922	270.7	3.422					
2000.0	3.543	34.922	270.9	3.382					
2050.0	3.508	34.922	271.1	3.343					
2100.0	3.471	34.922	271.1	3.302					
2150.0	3.423	34.922	271.4	3.250					
2200.0	3.392	34.923	271.6	3.215					
2250.0	3.360	34.924	271.8	3.179					
2300.0	3.316	34.925	271.9	3.130					
2350.0	3.282	34.926	271.9	3.092					
2400.0	3.253	34.927	271.7	3.059					
2450.0	3.220	34.929	271.1	3.021					
2500.0	3.195	34.930	270.7	2.992					
2550.0	3.172	34.932	270.3	2.964					
2600.0	3.133	34.935	269.6	2.921					
2650.0	3.102	34.938	269.4	2.885					
2700.0	3.067	34.939	268.8	2.846					
2750.0	3.046	34.942	268.1	2.820					
2800.0	3.017	34.943	266.7	2.786					
2850.0	3.000	34.944	266.1	2.765					
2900.0	2.964	34.944	264.6	2.725					
2950.0	2.946	34.944	263.5	2.702					
3000.0	2.916	34.944	262.1	2.667					



Station: 42

Cruise	: BOCATS 2016			
Station	: 43	Cast	: 1	
Date	: 04/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3915 m	Organism	: CSIC/IIM VIGO	
Position	: N 51 1.68			
	W 023 12.09			

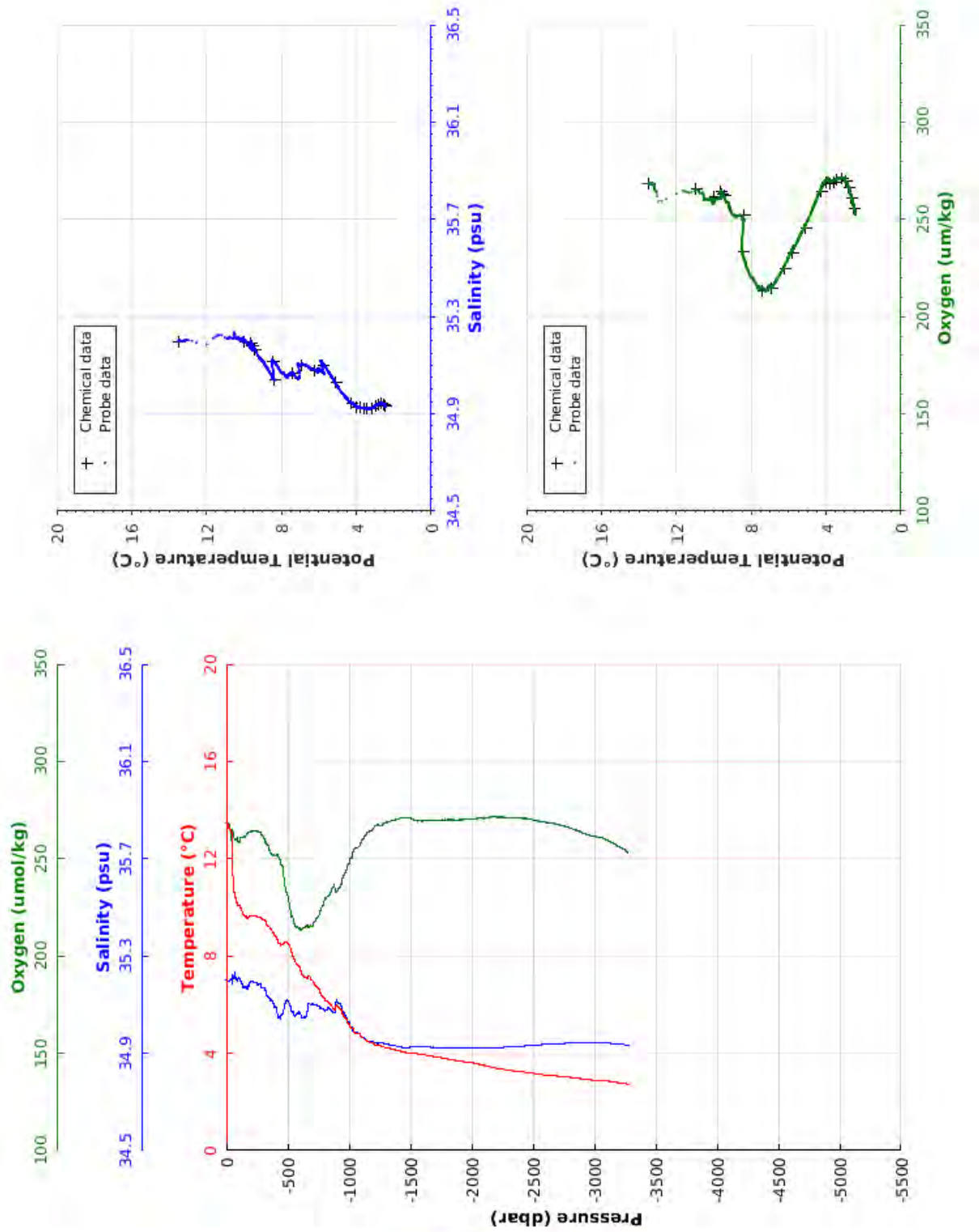
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.434	35.231	265.7	13.434	3050.0	2.896	34.943	261.2	2.643
10.0	13.372	35.231	265.6	13.371	3100.0	2.873	34.942	259.9	2.614
20.0	13.259	35.253	266.6	13.256	3150.0	2.834	34.941	258.6	2.571
30.0	13.236	35.255	266.4	13.232	3200.0	2.810	34.939	257.2	2.542
40.0	13.197	35.254	265.0	13.192	3250.0	2.787	34.938	256.1	2.514
50.0	11.897	35.219	260.8	11.891	3300.0	2.749	34.935	254.3	2.472
100.0	10.062	35.198	261.0	10.050	3350.0	2.733	34.934	253.2	2.451
150.0	9.779	35.188	255.3	9.762	3400.0	2.722	34.932	252.3	2.435
200.0	9.567	35.168	262.5	9.544	3450.0	2.700	34.930	251.2	2.408
250.0	9.476	35.156	262.0	9.448	3500.0	2.683	34.928	250.1	2.386
300.0	9.307	35.142	255.3	9.274	3550.0	2.674	34.927	249.1	2.372
350.0	9.028	35.115	247.1	8.989	3600.0	2.665	34.925	248.3	2.358
400.0	8.870	35.120	237.3	8.826	3650.0	2.650	34.923	247.3	2.337
450.0	8.713	35.139	220.3	8.664	3700.0	2.628	34.921	245.7	2.311
500.0	8.178	35.097	212.7	8.125	3750.0	2.622	34.920	245.3	2.299
550.0	7.783	35.090	209.7	7.727	3800.0	2.618	34.919	244.8	2.290
600.0	7.214	35.063	209.0	7.155	3850.0	2.612	34.918	244.1	2.277
650.0	7.024	35.099	214.8	6.961	3900.0	2.612	34.917	243.7	2.272
700.0	6.357	35.051	224.8	6.292	3950.0	2.618	34.917	243.6	2.272
750.0	6.267	35.073	227.1	6.198	3976.0	2.621	34.917	243.9	2.272
800.0	5.694	35.027	237.5	5.623					
850.0	5.381	35.008	243.7	5.308					
900.0	5.078	34.987	250.9	5.002					
950.0	5.062	35.006	250.3	4.982					
1000.0	4.804	34.979	255.7	4.721					
1050.0	4.703	34.977	257.8	4.616					
1100.0	4.535	34.960	261.8	4.446					
1150.0	4.458	34.957	263.4	4.365					
1200.0	4.313	34.943	266.6	4.217					
1250.0	4.222	34.936	268.8	4.122					
1300.0	4.107	34.924	271.2	4.004					
1350.0	4.068	34.923	272.4	3.960					
1400.0	3.999	34.917	272.9	3.888					
1450.0	3.963	34.918	272.3	3.848					
1500.0	3.938	34.919	271.8	3.818					
1550.0	3.905	34.920	271.4	3.782					
1600.0	3.862	34.918	271.6	3.735					
1650.0	3.829	34.921	271.1	3.697					
1700.0	3.806	34.922	270.6	3.669					
1750.0	3.769	34.923	270.2	3.629					
1800.0	3.730	34.923	270.2	3.586					
1850.0	3.692	34.923	270.1	3.544					
1900.0	3.655	34.923	270.2	3.502					
1950.0	3.608	34.924	270.6	3.451					
2000.0	3.566	34.924	270.8	3.405					
2050.0	3.538	34.924	271.2	3.373					
2100.0	3.494	34.923	271.3	3.324					
2150.0	3.461	34.924	271.4	3.287					
2200.0	3.416	34.924	271.6	3.239					
2250.0	3.383	34.925	271.7	3.201					
2300.0	3.360	34.925	271.6	3.173					
2350.0	3.322	34.926	271.7	3.132					
2400.0	3.289	34.928	271.3	3.093					
2450.0	3.250	34.929	270.8	3.051					
2500.0	3.209	34.931	270.1	3.005					
2550.0	3.174	34.933	269.4	2.966					
2600.0	3.146	34.935	268.9	2.933					
2650.0	3.110	34.938	268.7	2.893					
2700.0	3.081	34.939	267.8	2.860					
2750.0	3.059	34.941	267.1	2.833					
2800.0	3.034	34.942	266.4	2.803					
2850.0	3.012	34.943	265.6	2.776					
2900.0	2.981	34.943	264.5	2.741					
2950.0	2.957	34.943	263.3	2.713					
3000.0	2.930	34.943	262.0	2.681					



Station: 43

Cruise	: BOCATS 2016			
Station	: 44	Cast	: 1	
Date	: 04/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3247 m	Organism	: CSIC/IIM VIGO	
Position	: N 51 24.13 W 023 29.11			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.473	35.202	268.6	13.473	3050.0	2.891	34.943	260.9	2.637
10.0	13.428	35.201	267.9	13.427	3100.0	2.861	34.942	259.7	2.603
20.0	13.276	35.198	268.3	13.273	3150.0	2.824	34.940	258.3	2.561
30.0	13.216	35.199	267.7	13.212	3200.0	2.788	34.938	256.3	2.521
40.0	13.147	35.203	264.8	13.141	3250.0	2.751	34.935	254.5	2.479
50.0	11.641	35.212	264.8	11.635	3289.0	2.714	34.932	252.6	2.439
100.0	10.083	35.205	259.3	10.071					
150.0	9.627	35.169	261.4	9.610					
200.0	9.666	35.194	264.0	9.643					
250.0	9.630	35.189	264.2	9.602					
300.0	9.497	35.170	262.0	9.463					
350.0	9.204	35.132	255.9	9.165					
400.0	8.832	35.094	251.7	8.789					
450.0	8.483	35.058	247.1	8.436					
500.0	8.519	35.118	232.3	8.466					
550.0	7.954	35.068	219.0	7.897					
600.0	7.465	35.069	214.4	7.405					
650.0	7.093	35.048	215.2	7.030					
700.0	7.008	35.102	215.6	6.940					
750.0	6.666	35.095	219.9	6.594					
800.0	6.259	35.080	226.8	6.186					
850.0	6.026	35.081	232.0	5.948					
900.0	5.988	35.119	232.5	5.906					
950.0	5.571	35.072	239.6	5.488					
1000.0	5.206	35.029	247.2	5.121					
1050.0	4.835	34.984	255.2	4.747					
1100.0	4.691	34.970	258.4	4.600					
1150.0	4.485	34.952	263.4	4.391					
1200.0	4.401	34.946	265.4	4.304					
1250.0	4.317	34.943	266.9	4.217					
1300.0	4.226	34.938	268.3	4.122					
1350.0	4.170	34.933	269.5	4.062					
1400.0	4.112	34.929	270.3	3.999					
1450.0	4.038	34.924	271.2	3.922					
1500.0	4.009	34.925	270.7	3.888					
1550.0	3.986	34.928	269.7	3.861					
1600.0	3.949	34.928	269.4	3.821					
1650.0	3.905	34.926	269.7	3.772					
1700.0	3.861	34.925	270.0	3.724					
1750.0	3.822	34.924	269.9	3.681					
1800.0	3.782	34.923	269.8	3.637					
1850.0	3.725	34.923	269.9	3.576					
1900.0	3.677	34.923	269.9	3.524					
1950.0	3.637	34.923	270.2	3.480					
2000.0	3.603	34.922	270.6	3.442					
2050.0	3.556	34.922	270.6	3.390					
2100.0	3.507	34.922	270.6	3.337					
2150.0	3.438	34.923	271.4	3.265					
2200.0	3.386	34.923	271.4	3.208					
2250.0	3.345	34.924	271.3	3.163					
2300.0	3.305	34.926	271.3	3.119					
2350.0	3.268	34.927	271.1	3.078					
2400.0	3.243	34.929	270.9	3.048					
2450.0	3.217	34.931	270.7	3.018					
2500.0	3.175	34.933	270.0	2.972					
2550.0	3.150	34.935	269.3	2.942					
2600.0	3.107	34.937	268.8	2.895					
2650.0	3.094	34.939	268.3	2.877					
2700.0	3.062	34.940	267.5	2.841					
2750.0	3.049	34.940	266.7	2.823					
2800.0	3.019	34.942	265.9	2.788					
2850.0	2.980	34.943	264.7	2.745					
2900.0	2.943	34.943	263.4	2.704					
2950.0	2.919	34.943	262.4	2.675					
3000.0	2.895	34.943	261.7	2.647					

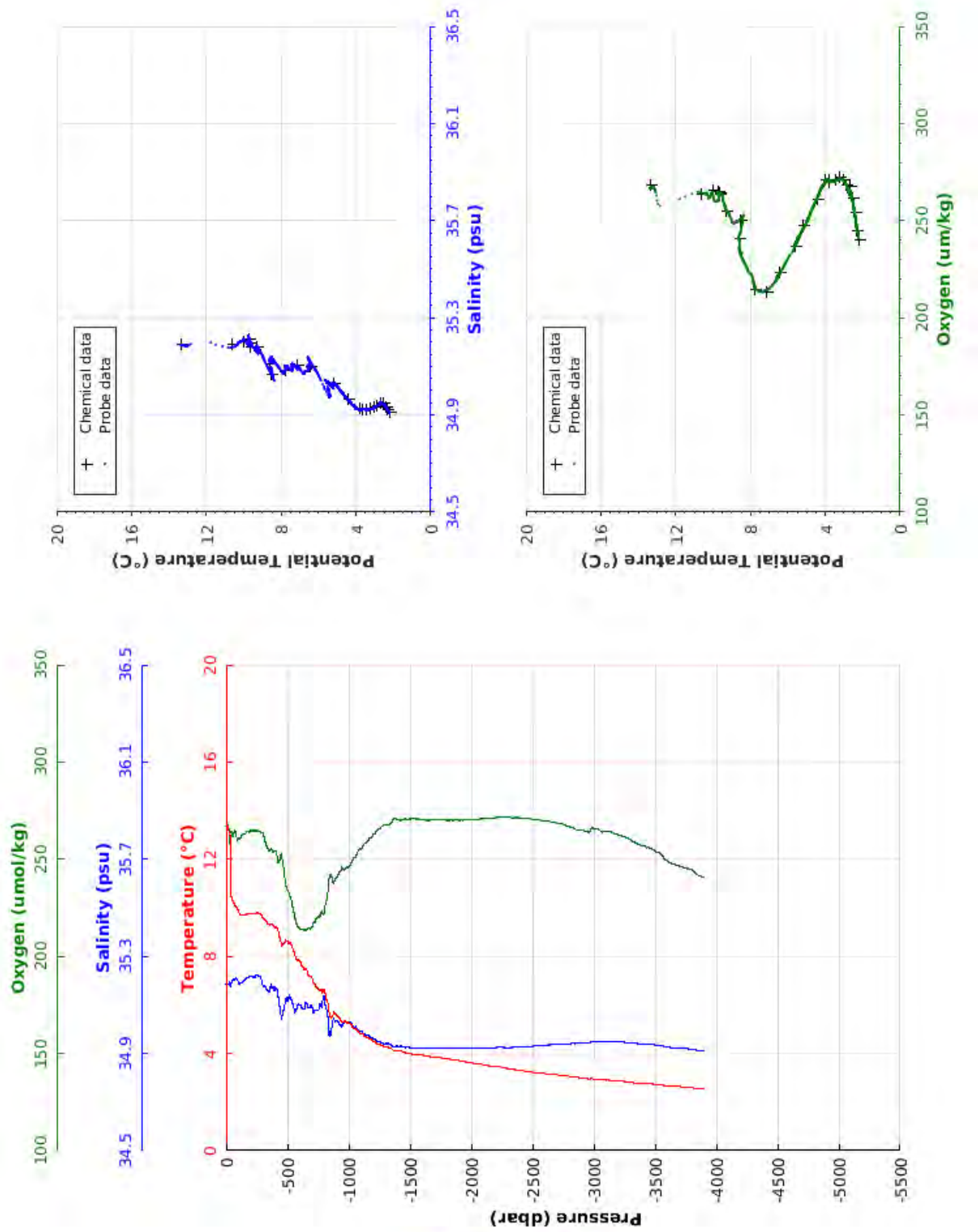


Station: 44



Cruise	: BOCATS 2016			
Station	: 45	Cast	: 1	
Date	: 05/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3849 m	Organism	: CSIC/IIM VIGO	
Position	: N 51 46.24 W 023 47.09			

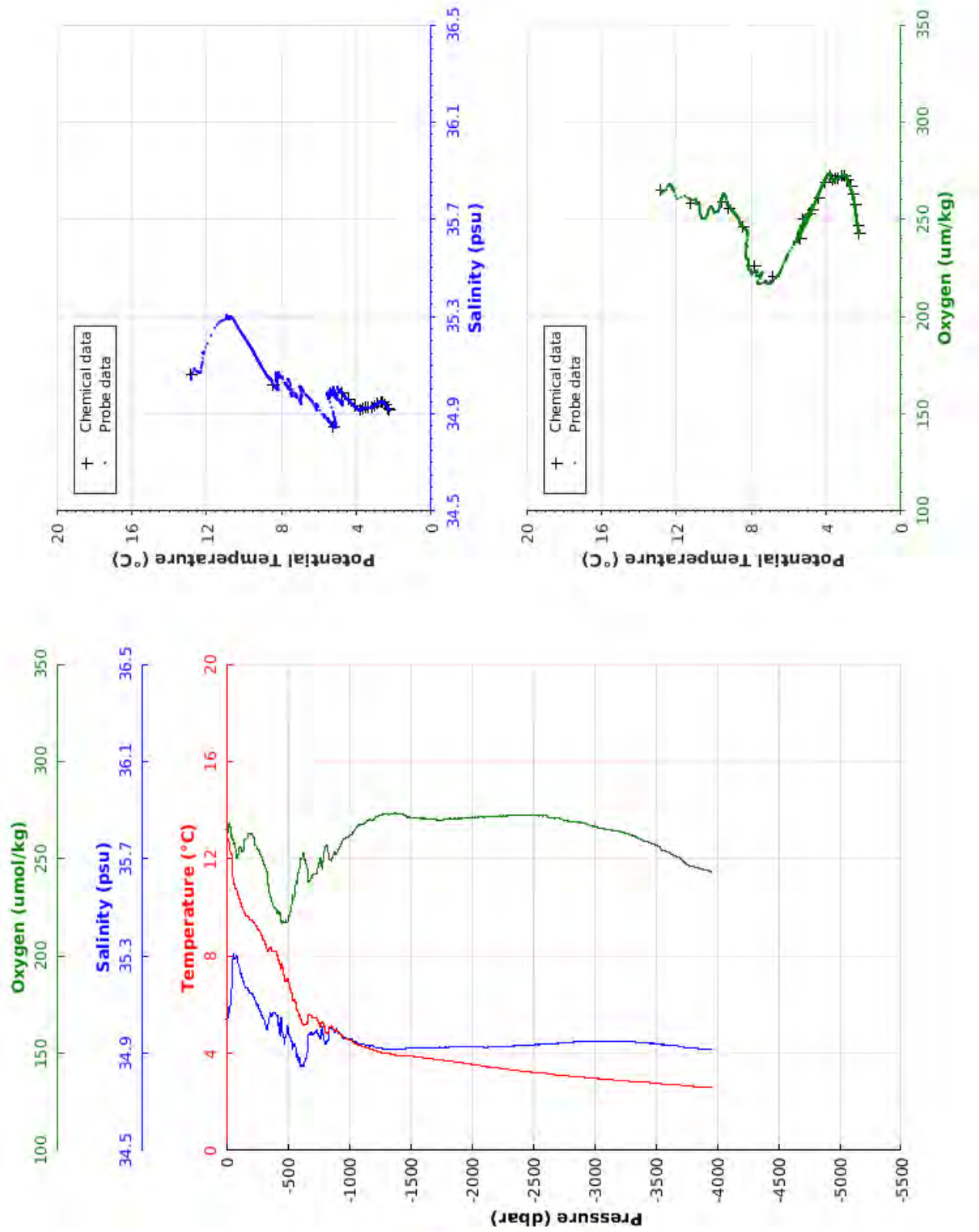
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.343	35.187	267.1	13.342	3050.0	2.928	34.949	265.0	2.674
10.0	13.346	35.187	266.6	13.344	3100.0	2.902	34.949	264.1	2.643
20.0	13.185	35.186	267.4	13.183	3150.0	2.885	34.949	263.7	2.621
30.0	13.033	35.183	263.0	13.029	3200.0	2.873	34.947	262.5	2.604
40.0	10.550	35.180	264.1	10.546	3250.0	2.845	34.946	261.4	2.571
50.0	10.335	35.193	264.3	10.330	3300.0	2.815	34.944	260.1	2.537
100.0	9.862	35.198	259.7	9.850	3350.0	2.788	34.941	258.2	2.505
150.0	9.702	35.200	262.7	9.685	3400.0	2.770	34.940	256.9	2.482
200.0	9.766	35.217	264.1	9.743	3450.0	2.759	34.939	255.9	2.465
250.0	9.780	35.222	264.3	9.752	3500.0	2.736	34.935	254.4	2.437
300.0	9.589	35.186	263.4	9.555	3550.0	2.709	34.932	252.6	2.406
350.0	9.326	35.157	255.2	9.287	3600.0	2.676	34.927	249.2	2.368
400.0	9.170	35.158	253.9	9.126	3650.0	2.654	34.924	247.5	2.341
450.0	8.555	35.061	251.1	8.507	3700.0	2.640	34.922	246.4	2.322
500.0	8.647	35.128	235.0	8.593	3750.0	2.624	34.920	245.5	2.301
550.0	8.211	35.099	225.1	8.153	3800.0	2.604	34.918	244.6	2.275
600.0	7.799	35.099	214.6	7.737	3850.0	2.554	34.912	242.0	2.222
650.0	7.498	35.107	213.5	7.433	3900.0	2.549	34.911	241.0	2.211
700.0	7.117	35.093	214.9	7.048	3908.0	2.551	34.911	241.3	2.212
750.0	6.648	35.079	220.1	6.577					
800.0	6.638	35.137	221.4	6.562					
850.0	5.525	34.983	240.6	5.451					
900.0	5.598	35.036	239.9	5.519					
950.0	5.290	35.013	245.7	5.209					
1000.0	5.250	35.031	246.0	5.163					
1050.0	5.029	35.011	250.8	4.940					
1100.0	4.825	34.992	255.2	4.733					
1150.0	4.672	34.976	258.8	4.577					
1200.0	4.497	34.959	262.4	4.399					
1250.0	4.372	34.949	265.5	4.271					
1300.0	4.274	34.939	267.9	4.169					
1350.0	4.194	34.936	268.8	4.086					
1400.0	4.110	34.930	270.3	3.998					
1450.0	4.064	34.927	270.3	3.948					
1500.0	3.999	34.924	270.9	3.879					
1550.0	3.959	34.923	271.0	3.835					
1600.0	3.934	34.924	270.3	3.805					
1650.0	3.897	34.924	270.1	3.764					
1700.0	3.854	34.922	270.4	3.717					
1750.0	3.822	34.923	270.3	3.681					
1800.0	3.791	34.923	270.0	3.645					
1850.0	3.748	34.923	270.0	3.599					
1900.0	3.711	34.923	270.0	3.558					
1950.0	3.657	34.923	270.1	3.500					
2000.0	3.625	34.923	270.4	3.464					
2050.0	3.587	34.923	270.6	3.421					
2100.0	3.532	34.923	270.8	3.362					
2150.0	3.490	34.922	271.0	3.316					
2200.0	3.465	34.924	271.2	3.286					
2250.0	3.435	34.925	271.5	3.252					
2300.0	3.384	34.924	271.5	3.197					
2350.0	3.335	34.925	271.3	3.144					
2400.0	3.299	34.926	271.3	3.104					
2450.0	3.259	34.928	271.0	3.060					
2500.0	3.233	34.930	270.5	3.029					
2550.0	3.200	34.933	270.3	2.991					
2600.0	3.173	34.934	269.8	2.960					
2650.0	3.147	34.936	269.4	2.930					
2700.0	3.127	34.937	268.8	2.904					
2750.0	3.096	34.939	268.3	2.869					
2800.0	3.063	34.940	266.7	2.831					
2850.0	3.030	34.941	265.6	2.794					
2900.0	2.999	34.943	264.8	2.759					
2950.0	2.963	34.944	264.1	2.718					
3000.0	2.954	34.949	265.9	2.704					



Station: 45

Cruise	: BOCATS 2016		
Station	: 46	Cast	: 1
Date	: 05/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 3904 m	Organism	: CSIC/IIM VIGO
Position	: N 52 8.89		
	W 024 4.41		

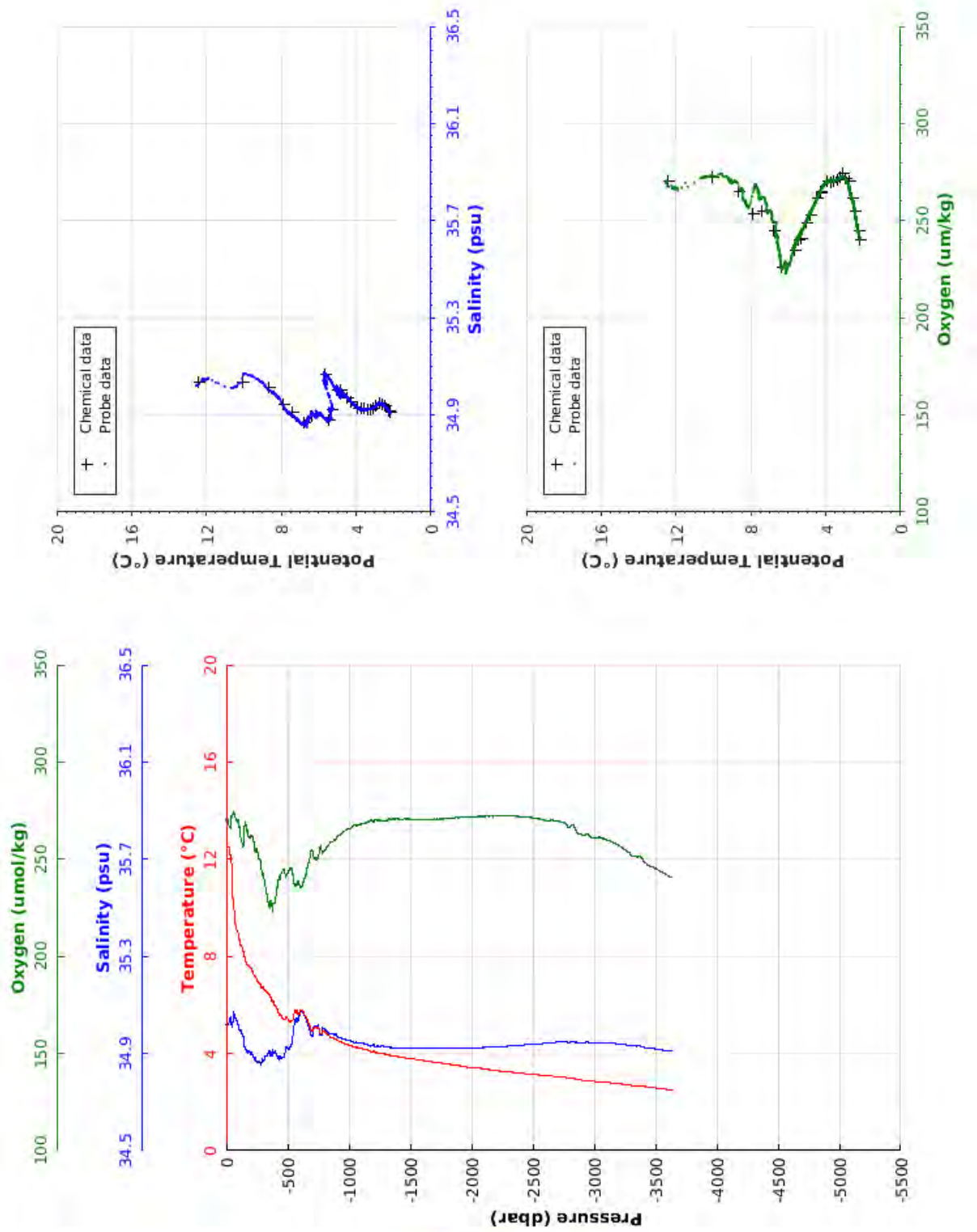
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.834	35.041	264.8	12.834	3050.0	2.950	34.948	265.8	2.695
10.0	12.834	35.043	264.6	12.833	3100.0	2.923	34.949	265.1	2.663
20.0	12.762	35.064	263.6	12.759	3150.0	2.906	34.949	264.7	2.641
30.0	12.351	35.071	268.1	12.347	3200.0	2.890	34.950	264.1	2.620
40.0	12.210	35.129	266.1	12.205	3250.0	2.864	34.950	263.4	2.590
50.0	11.567	35.254	262.1	11.561	3300.0	2.844	34.947	262.2	2.564
100.0	10.420	35.268	251.3	10.409	3350.0	2.826	34.945	261.1	2.542
150.0	9.724	35.182	255.7	9.707	3400.0	2.804	34.943	259.5	2.515
200.0	9.475	35.148	262.9	9.453	3450.0	2.793	34.941	258.4	2.498
250.0	9.171	35.106	256.8	9.143	3500.0	2.784	34.940	257.4	2.484
300.0	8.668	35.043	249.8	8.636	3550.0	2.743	34.936	254.7	2.439
350.0	8.257	35.031	236.2	8.221	3600.0	2.736	34.935	253.6	2.426
400.0	8.192	35.067	224.7	8.150	3650.0	2.707	34.931	251.6	2.392
450.0	7.718	35.045	217.6	7.673	3700.0	2.694	34.929	250.4	2.375
500.0	7.045	35.011	217.3	6.997	3750.0	2.643	34.922	247.3	2.319
550.0	6.204	34.938	229.5	6.154	3800.0	2.638	34.921	246.2	2.309
600.0	5.516	34.874	243.7	5.465	3850.0	2.626	34.920	245.1	2.292
650.0	5.195	34.874	248.8	5.141	3900.0	2.614	34.918	244.3	2.274
700.0	5.457	34.975	240.8	5.398	3950.0	2.593	34.915	243.1	2.247
750.0	5.326	34.981	244.8	5.262	3965.0	2.593	34.915	243.1	2.246
800.0	4.952	34.953	252.0	4.887					
850.0	5.090	35.005	249.7	5.019					
900.0	4.968	35.001	252.2	4.894					
950.0	4.663	34.966	258.7	4.586					
1000.0	4.568	34.962	261.3	4.487					
1050.0	4.418	34.948	264.7	4.334					
1100.0	4.306	34.940	267.5	4.219					
1150.0	4.213	34.931	269.3	4.122					
1200.0	4.161	34.931	269.7	4.066					
1250.0	4.049	34.921	272.3	3.950					
1300.0	4.004	34.918	272.9	3.902					
1350.0	3.955	34.916	273.0	3.849					
1400.0	3.908	34.915	273.2	3.798					
1450.0	3.896	34.916	272.6	3.782					
1500.0	3.888	34.921	271.1	3.769					
1550.0	3.854	34.921	271.0	3.731					
1600.0	3.820	34.922	270.6	3.693					
1650.0	3.795	34.922	270.5	3.663					
1700.0	3.757	34.923	270.1	3.622					
1750.0	3.735	34.924	269.7	3.595					
1800.0	3.688	34.925	270.4	3.545					
1850.0	3.657	34.926	270.5	3.509					
1900.0	3.623	34.926	270.9	3.471					
1950.0	3.590	34.926	270.8	3.433					
2000.0	3.542	34.926	271.1	3.382					
2050.0	3.509	34.926	271.3	3.344					
2100.0	3.464	34.924	271.3	3.295					
2150.0	3.435	34.926	271.7	3.262					
2200.0	3.415	34.927	271.8	3.237					
2250.0	3.374	34.927	272.0	3.192					
2300.0	3.333	34.928	272.0	3.147					
2350.0	3.310	34.930	272.3	3.120					
2400.0	3.272	34.932	272.4	3.077					
2450.0	3.253	34.933	272.5	3.054					
2500.0	3.219	34.934	272.3	3.015					
2550.0	3.194	34.936	272.0	2.985					
2600.0	3.187	34.939	272.3	2.973					
2650.0	3.132	34.938	270.9	2.915					
2700.0	3.112	34.941	271.1	2.890					
2750.0	3.089	34.943	270.0	2.862					
2800.0	3.060	34.945	269.3	2.828					
2850.0	3.045	34.947	269.1	2.808					
2900.0	3.022	34.948	268.6	2.781					
2950.0	2.991	34.949	267.5	2.746					
3000.0	2.963	34.948	266.7	2.713					



Station: 46

Cruise	: BOCATS 2016			
Station	: 47	Cast	: 1	
Date	: 05/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3596 m	Organism	: CSIC/IIM VIGO	
Position	: N 52 31.14 W 024 21.51			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.530	35.020	269.8	12.530	3050.0	2.836	34.945	261.3	2.583
10.0	12.523	35.021	269.5	12.521	3100.0	2.809	34.944	260.0	2.551
20.0	12.518	35.021	269.8	12.516	3150.0	2.787	34.942	258.7	2.525
30.0	12.207	35.046	266.5	12.203	3200.0	2.761	34.940	257.3	2.494
40.0	11.955	35.047	266.9	11.950	3250.0	2.731	34.936	255.0	2.459
50.0	10.514	35.015	272.3	10.508	3300.0	2.690	34.931	252.3	2.415
100.0	8.865	35.018	270.1	8.854	3350.0	2.674	34.930	251.1	2.394
150.0	7.910	34.936	264.5	7.895	3400.0	2.648	34.926	249.5	2.363
200.0	7.525	34.904	261.5	7.505	3450.0	2.611	34.922	246.9	2.321
250.0	7.017	34.868	255.4	6.994	3500.0	2.583	34.919	245.4	2.288
300.0	6.721	34.878	241.5	6.693	3550.0	2.549	34.915	243.4	2.250
350.0	6.449	34.911	227.1	6.417	3600.0	2.510	34.910	241.4	2.206
400.0	5.977	34.908	227.4	5.942	3650.0	2.512	34.910	241.1	2.203
450.0	5.481	34.880	241.8	5.443					
500.0	5.419	34.923	242.2	5.378					
550.0	5.524	34.983	242.0	5.477					
600.0	5.732	35.060	237.0	5.680					
650.0	5.485	35.048	241.2	5.430					
700.0	4.899	34.971	254.5	4.843					
750.0	5.075	35.017	249.9	5.013					
800.0	4.891	35.002	253.8	4.825					
850.0	4.674	34.980	258.5	4.605					
900.0	4.600	34.977	260.0	4.527					
950.0	4.426	34.959	263.9	4.351					
1000.0	4.353	34.953	265.5	4.273					
1050.0	4.255	34.945	267.5	4.172					
1100.0	4.212	34.943	268.0	4.125					
1150.0	4.144	34.938	268.6	4.053					
1200.0	4.096	34.936	269.1	4.001					
1250.0	4.009	34.930	270.1	3.911					
1300.0	3.976	34.929	269.8	3.874					
1350.0	3.908	34.924	270.4	3.802					
1400.0	3.871	34.923	270.7	3.761					
1450.0	3.834	34.922	270.7	3.720					
1500.0	3.788	34.922	270.6	3.670					
1550.0	3.756	34.923	270.4	3.634					
1600.0	3.716	34.923	270.2	3.590					
1650.0	3.683	34.923	270.3	3.553					
1700.0	3.634	34.923	270.7	3.500					
1750.0	3.604	34.923	270.7	3.465					
1800.0	3.570	34.923	270.9	3.428					
1850.0	3.539	34.923	271.1	3.393					
1900.0	3.498	34.923	271.4	3.347					
1950.0	3.452	34.923	271.7	3.297					
2000.0	3.423	34.924	272.0	3.264					
2050.0	3.401	34.924	272.0	3.238					
2100.0	3.360	34.925	272.0	3.193					
2150.0	3.331	34.926	272.0	3.159					
2200.0	3.297	34.928	272.2	3.121					
2250.0	3.268	34.929	272.3	3.087					
2300.0	3.249	34.930	272.2	3.064					
2350.0	3.215	34.933	272.2	3.026					
2400.0	3.190	34.934	271.8	2.997					
2450.0	3.156	34.937	271.6	2.958					
2500.0	3.142	34.938	271.2	2.939					
2550.0	3.115	34.940	270.7	2.908					
2600.0	3.088	34.941	270.1	2.876					
2650.0	3.069	34.945	270.0	2.853					
2700.0	3.045	34.947	269.5	2.825					
2750.0	3.016	34.948	268.9	2.791					
2800.0	2.983	34.946	266.1	2.754					
2850.0	2.947	34.946	265.3	2.713					
2900.0	2.900	34.945	262.8	2.662					
2950.0	2.888	34.947	262.9	2.644					
3000.0	2.850	34.945	260.8	2.602					

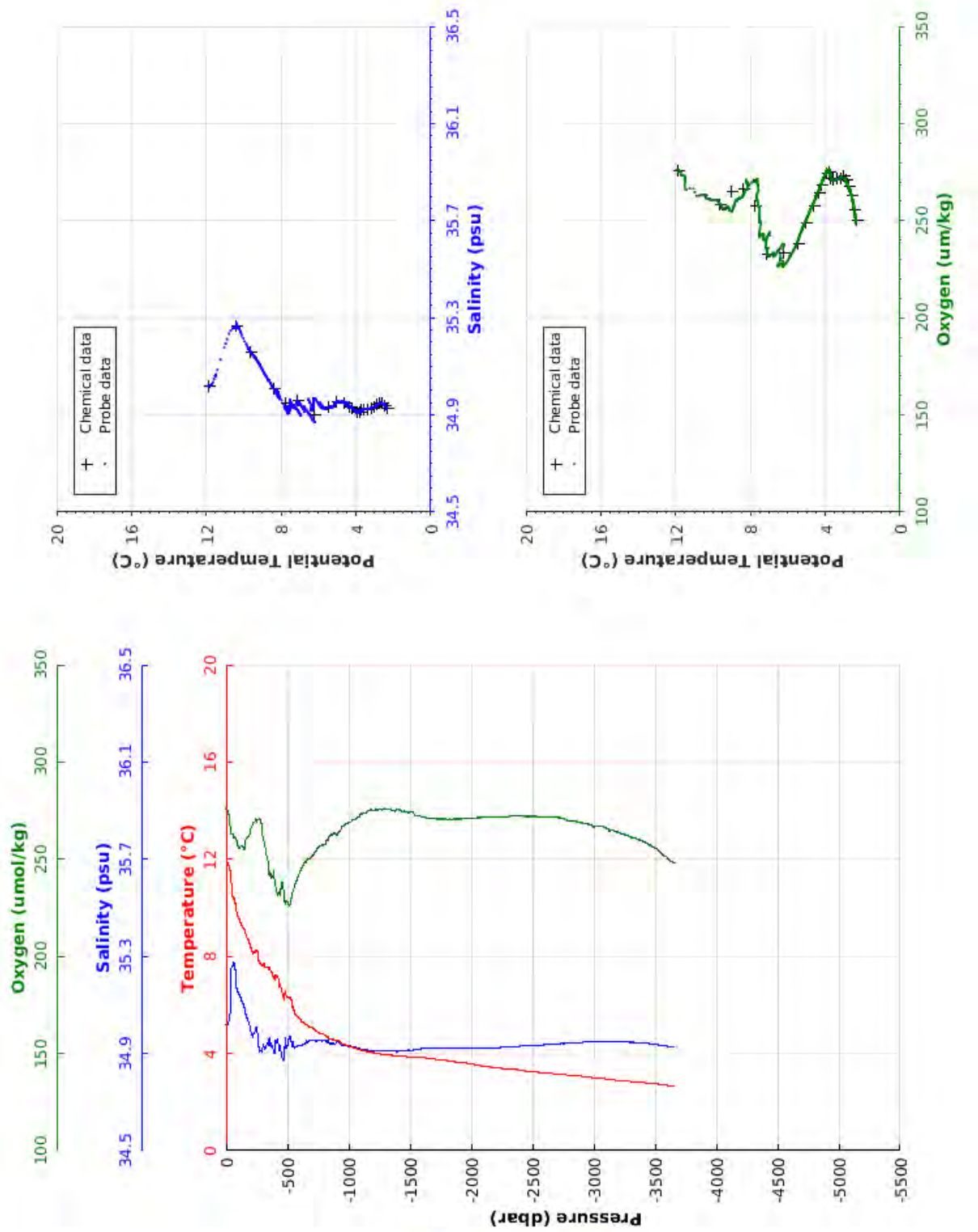


**Station: 47**



Cruise	: BOCATS 2016			
Station	: 48	Cast	: 1	
Date	: 06/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3613 m	Organism	: CSIC/IIM VIGO	
Position	: N 52 53.38 W 024 39.54			

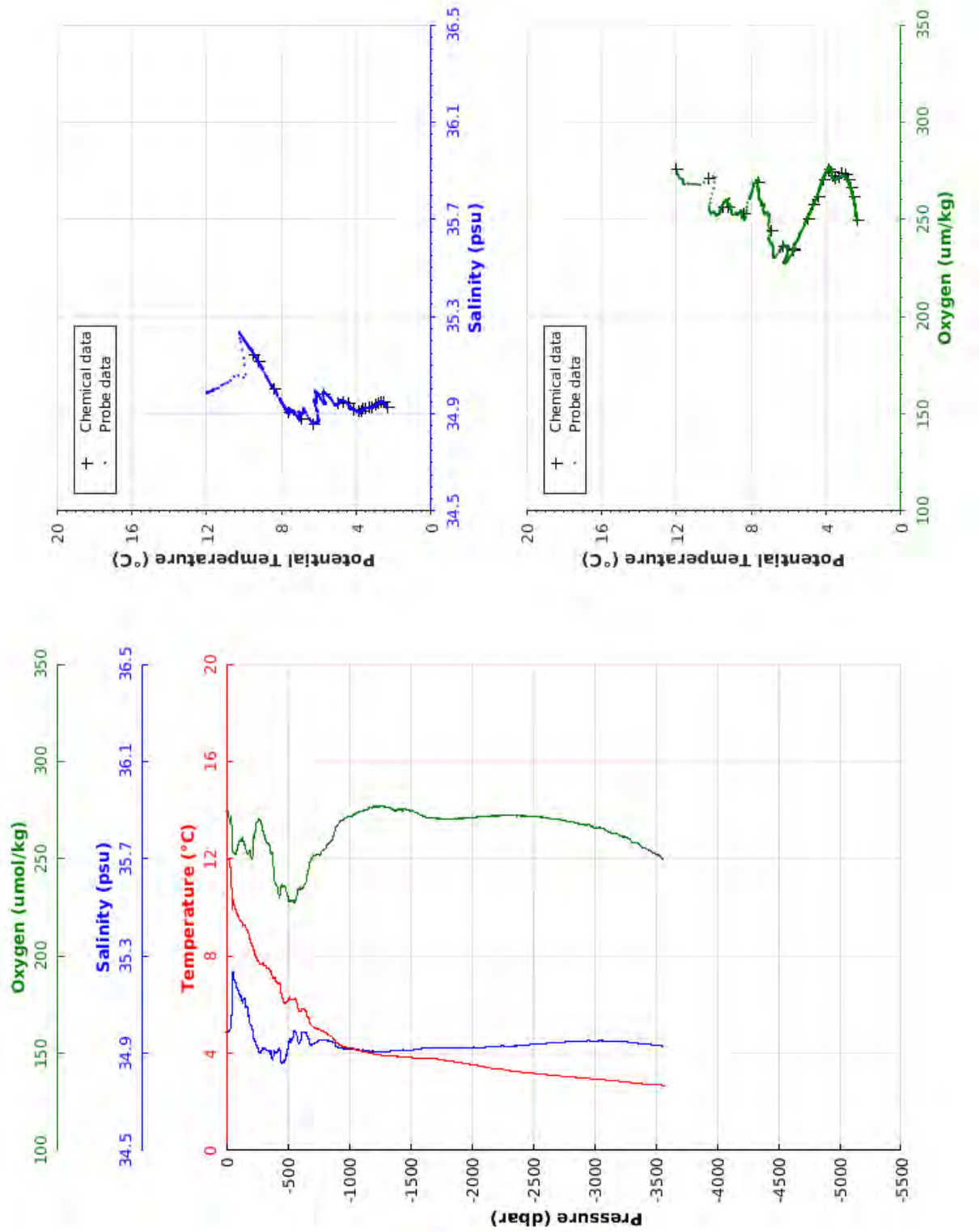
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.872	35.019	276.3	11.872	3050.0	2.978	34.950	267.0	2.722
10.0	11.863	35.019	276.0	11.861	3100.0	2.955	34.950	266.3	2.695
20.0	11.777	35.021	275.2	11.774	3150.0	2.918	34.950	265.0	2.653
30.0	11.521	35.061	272.1	11.517	3200.0	2.897	34.949	264.0	2.628
40.0	11.414	35.087	266.0	11.409	3250.0	2.879	34.948	262.9	2.604
50.0	10.480	35.259	263.2	10.474	3300.0	2.849	34.946	261.3	2.570
100.0	9.598	35.155	258.0	9.587	3350.0	2.826	34.945	260.4	2.541
150.0	9.083	35.096	255.2	9.067	3400.0	2.801	34.944	259.3	2.512
200.0	8.407	35.006	263.2	8.386	3450.0	2.776	34.941	257.5	2.482
250.0	8.260	35.007	270.6	8.234	3500.0	2.753	34.938	255.7	2.454
300.0	7.630	34.916	264.8	7.600	3550.0	2.718	34.934	253.1	2.414
350.0	7.529	34.951	245.8	7.495	3600.0	2.690	34.930	250.9	2.382
400.0	7.196	34.947	239.3	7.157	3650.0	2.661	34.926	248.4	2.348
450.0	6.604	34.909	234.0	6.562	3666.0	2.662	34.926	248.6	2.347
500.0	6.300	34.927	228.6	6.255					
550.0	5.804	34.933	233.6	5.756					
600.0	5.434	34.933	242.0	5.383					
650.0	5.200	34.946	248.2	5.146					
700.0	5.062	34.954	251.1	5.005					
750.0	4.869	34.953	255.3	4.808					
800.0	4.780	34.954	257.3	4.715					
850.0	4.582	34.941	262.2	4.514					
900.0	4.568	34.949	262.6	4.496					
950.0	4.382	34.932	266.8	4.307					
1000.0	4.303	34.931	268.8	4.224					
1050.0	4.232	34.926	270.3	4.150					
1100.0	4.139	34.918	272.8	4.053					
1150.0	4.083	34.914	274.3	3.993					
1200.0	4.038	34.913	274.9	3.944					
1250.0	3.986	34.910	275.6	3.888					
1300.0	3.948	34.909	276.0	3.847					
1350.0	3.924	34.910	275.7	3.818					
1400.0	3.892	34.908	275.9	3.782					
1450.0	3.878	34.912	274.4	3.764					
1500.0	3.860	34.914	273.9	3.742					
1550.0	3.853	34.918	272.6	3.730					
1600.0	3.835	34.920	271.6	3.708					
1650.0	3.805	34.921	271.2	3.674					
1700.0	3.770	34.922	270.9	3.634					
1750.0	3.735	34.923	270.7	3.595					
1800.0	3.710	34.924	270.6	3.566					
1850.0	3.670	34.924	270.6	3.522					
1900.0	3.639	34.924	270.7	3.487					
1950.0	3.612	34.924	270.9	3.455					
2000.0	3.564	34.924	271.1	3.403					
2050.0	3.529	34.923	271.4	3.363					
2100.0	3.483	34.924	271.5	3.314					
2150.0	3.450	34.924	271.7	3.277					
2200.0	3.420	34.924	271.7	3.242					
2250.0	3.388	34.925	271.7	3.206					
2300.0	3.365	34.928	272.0	3.178					
2350.0	3.344	34.929	272.2	3.153					
2400.0	3.315	34.930	272.3	3.119					
2450.0	3.279	34.930	272.0	3.079					
2500.0	3.251	34.932	272.1	3.046					
2550.0	3.221	34.933	271.9	3.012					
2600.0	3.195	34.937	271.9	2.981					
2650.0	3.182	34.937	271.7	2.964					
2700.0	3.154	34.939	271.5	2.931					
2750.0	3.135	34.941	271.0	2.908					
2800.0	3.109	34.942	269.7	2.876					
2850.0	3.088	34.945	269.6	2.851					
2900.0	3.062	34.946	268.9	2.821					
2950.0	3.037	34.947	268.1	2.791					
3000.0	2.999	34.948	266.8	2.749					



Station: 48

Cruise	: BOCATS 2016			
Station	: 49	Cast	: 1	
Date	: 06/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3525 m	Organism	: CSIC/IIM VIGO	
Position	: N 53 15.92 W 024 56.88			

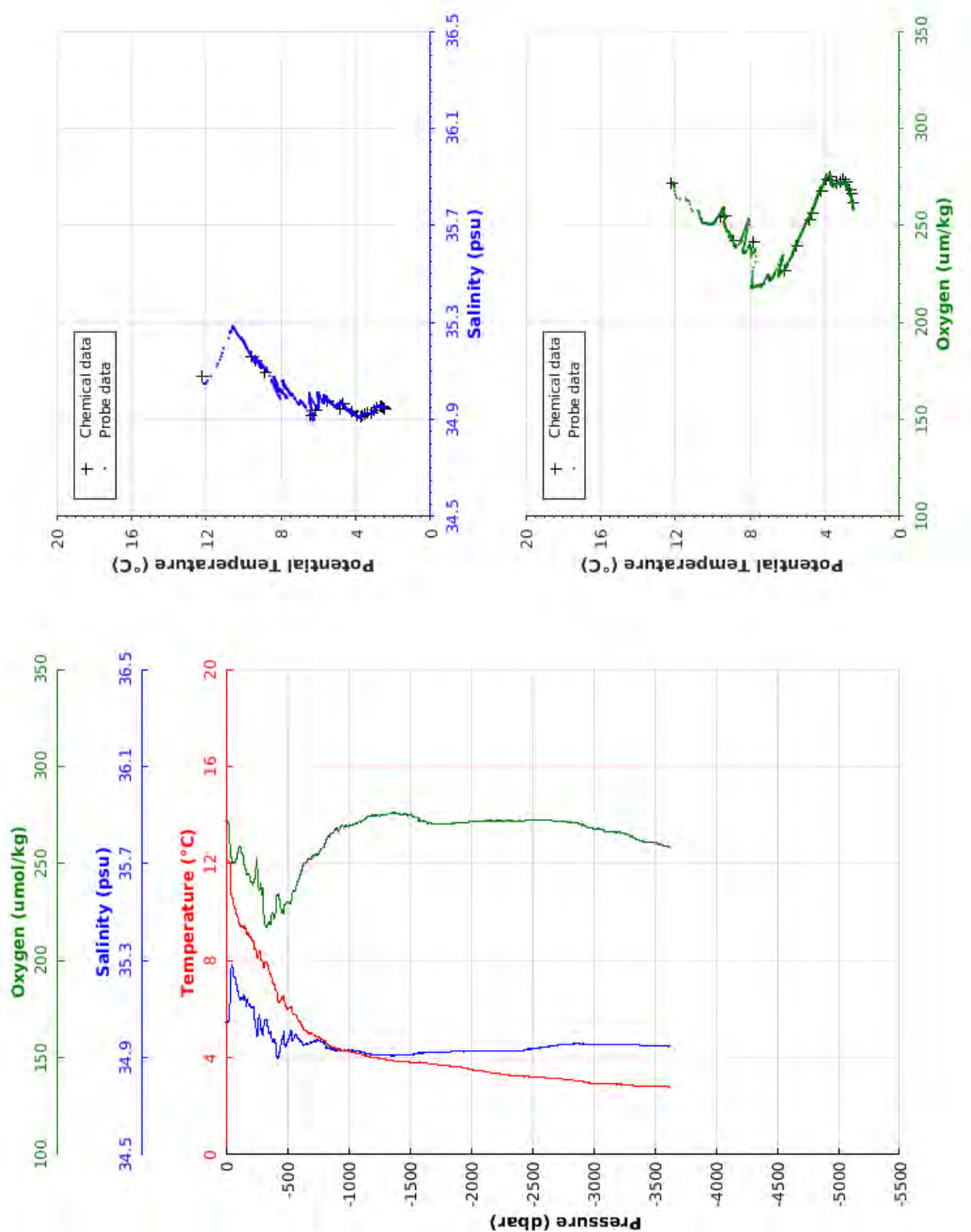
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.994	34.987	274.4	11.994	3050.0	2.928	34.952	266.0	2.674
10.0	11.995	34.988	274.2	11.994	3100.0	2.895	34.950	264.4	2.636
20.0	11.988	34.988	274.1	11.985	3150.0	2.871	34.948	263.1	2.607
30.0	11.669	34.998	270.3	11.665	3200.0	2.851	34.948	262.5	2.582
40.0	11.133	35.020	268.1	11.128	3250.0	2.826	34.947	261.3	2.552
50.0	10.092	35.164	263.3	10.086	3300.0	2.784	34.942	259.4	2.506
100.0	9.609	35.161	256.3	9.598	3350.0	2.776	34.943	258.3	2.493
150.0	9.291	35.124	257.5	9.274	3400.0	2.740	34.939	255.8	2.453
200.0	8.542	35.015	253.4	8.521	3450.0	2.725	34.936	254.4	2.432
250.0	7.873	34.930	268.3	7.848	3500.0	2.702	34.932	252.2	2.404
300.0	7.627	34.910	266.3	7.597	3550.0	2.683	34.930	250.7	2.380
350.0	7.456	34.910	257.2	7.422	3575.0	2.673	34.928	249.5	2.367
400.0	7.045	34.903	238.1	7.007					
450.0	6.410	34.864	235.8	6.369					
500.0	6.149	34.915	231.2	6.104					
550.0	6.190	34.968	228.7	6.141					
600.0	5.722	34.943	234.9	5.670					
650.0	5.714	34.985	237.5	5.657					
700.0	5.114	34.936	249.9	5.056					
750.0	5.002	34.952	252.0	4.940					
800.0	4.875	34.954	254.6	4.809					
850.0	4.706	34.951	258.5	4.637					
900.0	4.416	34.928	266.3	4.345					
950.0	4.287	34.920	269.9	4.213					
1000.0	4.224	34.918	271.6	4.146					
1050.0	4.157	34.916	272.8	4.075					
1100.0	4.090	34.913	274.4	4.004					
1150.0	4.037	34.912	275.1	3.947					
1200.0	3.975	34.908	276.3	3.882					
1250.0	3.935	34.907	276.7	3.838					
1300.0	3.907	34.907	276.7	3.806					
1350.0	3.893	34.911	275.4	3.788					
1400.0	3.868	34.911	275.0	3.758					
1450.0	3.828	34.910	275.3	3.714					
1500.0	3.825	34.913	274.8	3.707					
1550.0	3.811	34.916	273.7	3.688					
1600.0	3.797	34.920	272.1	3.670					
1650.0	3.786	34.922	271.1	3.655					
1700.0	3.767	34.923	270.9	3.631					
1750.0	3.739	34.923	270.5	3.599					
1800.0	3.702	34.924	270.5	3.558					
1850.0	3.661	34.924	270.4	3.513					
1900.0	3.612	34.924	270.8	3.460					
1950.0	3.576	34.924	270.9	3.420					
2000.0	3.534	34.925	271.2	3.374					
2050.0	3.488	34.925	271.4	3.323					
2100.0	3.435	34.924	271.8	3.267					
2150.0	3.395	34.925	271.9	3.223					
2200.0	3.360	34.927	272.0	3.183					
2250.0	3.343	34.931	272.3	3.161					
2300.0	3.290	34.928	272.1	3.105					
2350.0	3.260	34.930	272.2	3.070					
2400.0	3.230	34.931	272.0	3.035					
2450.0	3.201	34.934	272.0	3.002					
2500.0	3.174	34.936	271.8	2.971					
2550.0	3.150	34.938	271.5	2.942					
2600.0	3.126	34.941	271.1	2.913					
2650.0	3.087	34.943	270.5	2.870					
2700.0	3.072	34.944	270.2	2.851					
2750.0	3.049	34.946	269.8	2.823					
2800.0	3.032	34.947	269.2	2.801					
2850.0	3.005	34.949	268.3	2.770					
2900.0	2.984	34.950	267.6	2.744					
2950.0	2.968	34.953	267.7	2.723					
3000.0	2.935	34.950	266.0	2.685					



Station: 49

Cruise	: BOCATS 2016			
Station	: 50	Cast	: 1	
Date	: 06/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3579 m	Organism	: CSIC/IIM VIGO	
Position	: N 53 38.37 W 025 14.39			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.130	35.048	272.0	12.130	3050.0	2.938	34.956	267.9	2.683
10.0	12.139	35.048	272.0	12.138	3100.0	2.914	34.953	266.4	2.655
20.0	12.100	35.049	271.6	12.098	3150.0	2.912	34.954	266.4	2.647
30.0	12.049	35.049	269.5	12.045	3200.0	2.907	34.956	265.9	2.637
40.0	11.074	35.194	257.2	11.069	3250.0	2.898	34.956	265.7	2.623
50.0	10.599	35.282	252.4	10.593	3300.0	2.867	34.955	264.4	2.587
100.0	9.680	35.174	255.0	9.668	3350.0	2.834	34.953	262.8	2.550
150.0	9.405	35.156	252.0	9.388	3400.0	2.815	34.951	261.3	2.525
200.0	8.975	35.118	243.4	8.953	3450.0	2.816	34.950	261.1	2.521
250.0	8.269	35.019	248.4	8.243	3500.0	2.820	34.950	260.7	2.520
300.0	7.835	35.002	236.1	7.805	3550.0	2.811	34.949	259.8	2.505
350.0	7.590	35.011	219.1	7.555	3600.0	2.802	34.947	259.0	2.491
400.0	6.926	34.973	221.8	6.888	3631.0	2.792	34.947	258.4	2.477
450.0	6.432	34.950	228.6	6.391					
500.0	6.029	34.953	230.0	5.985					
550.0	5.761	34.969	235.5	5.714					
600.0	5.477	34.973	242.3	5.426					
650.0	5.127	34.954	250.1	5.073					
700.0	4.959	34.961	253.0	4.902					
750.0	4.881	34.975	254.3	4.820					
800.0	4.719	34.962	258.2	4.654					
850.0	4.505	34.943	263.7	4.438					
900.0	4.354	34.929	267.7	4.284					
950.0	4.282	34.926	269.5	4.208					
1000.0	4.267	34.932	268.9	4.189					
1050.0	4.205	34.928	270.2	4.122					
1100.0	4.148	34.925	271.4	4.062					
1150.0	4.066	34.917	273.5	3.977					
1200.0	4.010	34.913	274.6	3.916					
1250.0	3.978	34.913	274.7	3.881					
1300.0	3.926	34.911	274.8	3.825					
1350.0	3.881	34.909	276.0	3.776					
1400.0	3.855	34.910	275.8	3.746					
1450.0	3.843	34.912	274.9	3.729					
1500.0	3.816	34.912	275.0	3.698					
1550.0	3.802	34.916	273.7	3.680					
1600.0	3.799	34.921	271.7	3.672					
1650.0	3.762	34.922	270.9	3.631					
1700.0	3.728	34.923	270.4	3.593					
1750.0	3.695	34.923	270.2	3.556					
1800.0	3.668	34.923	270.4	3.525					
1850.0	3.647	34.926	270.7	3.499					
1900.0	3.613	34.926	270.9	3.461					
1950.0	3.568	34.926	271.0	3.412					
2000.0	3.513	34.926	271.5	3.353					
2050.0	3.468	34.926	271.7	3.304					
2100.0	3.436	34.926	271.9	3.267					
2150.0	3.400	34.926	272.1	3.228					
2200.0	3.352	34.925	272.0	3.175					
2250.0	3.324	34.926	272.0	3.143					
2300.0	3.292	34.927	272.1	3.106					
2350.0	3.259	34.929	272.0	3.069					
2400.0	3.235	34.929	271.9	3.041					
2450.0	3.228	34.933	272.3	3.029					
2500.0	3.220	34.937	272.5	3.016					
2550.0	3.207	34.940	272.5	2.998					
2600.0	3.176	34.944	272.5	2.963					
2650.0	3.155	34.947	272.2	2.937					
2700.0	3.138	34.951	272.0	2.915					
2750.0	3.116	34.953	271.7	2.888					
2800.0	3.094	34.955	271.3	2.862					
2850.0	3.059	34.957	271.0	2.822					
2900.0	3.021	34.955	270.2	2.780					
2950.0	2.972	34.953	269.0	2.727					
3000.0	2.948	34.954	267.9	2.699					

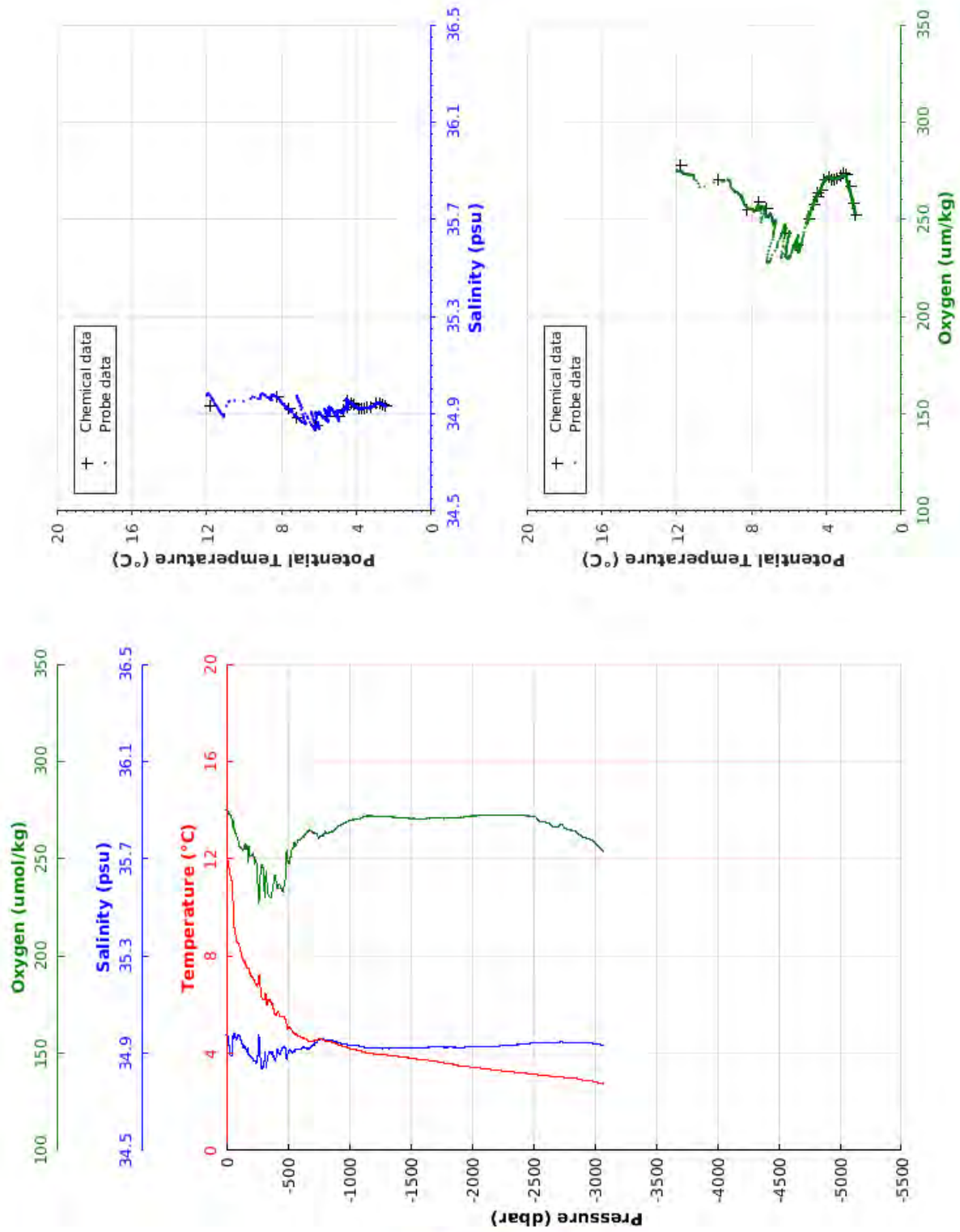


**Station: 50**



Cruise	: BOCATS 2016			
Station	: 51	Cast	: 1	
Date	: 06/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3042 m	Organism	: CSIC/IIM VIGO	
Position	: N 54 1.09			
	W 025 31.80			

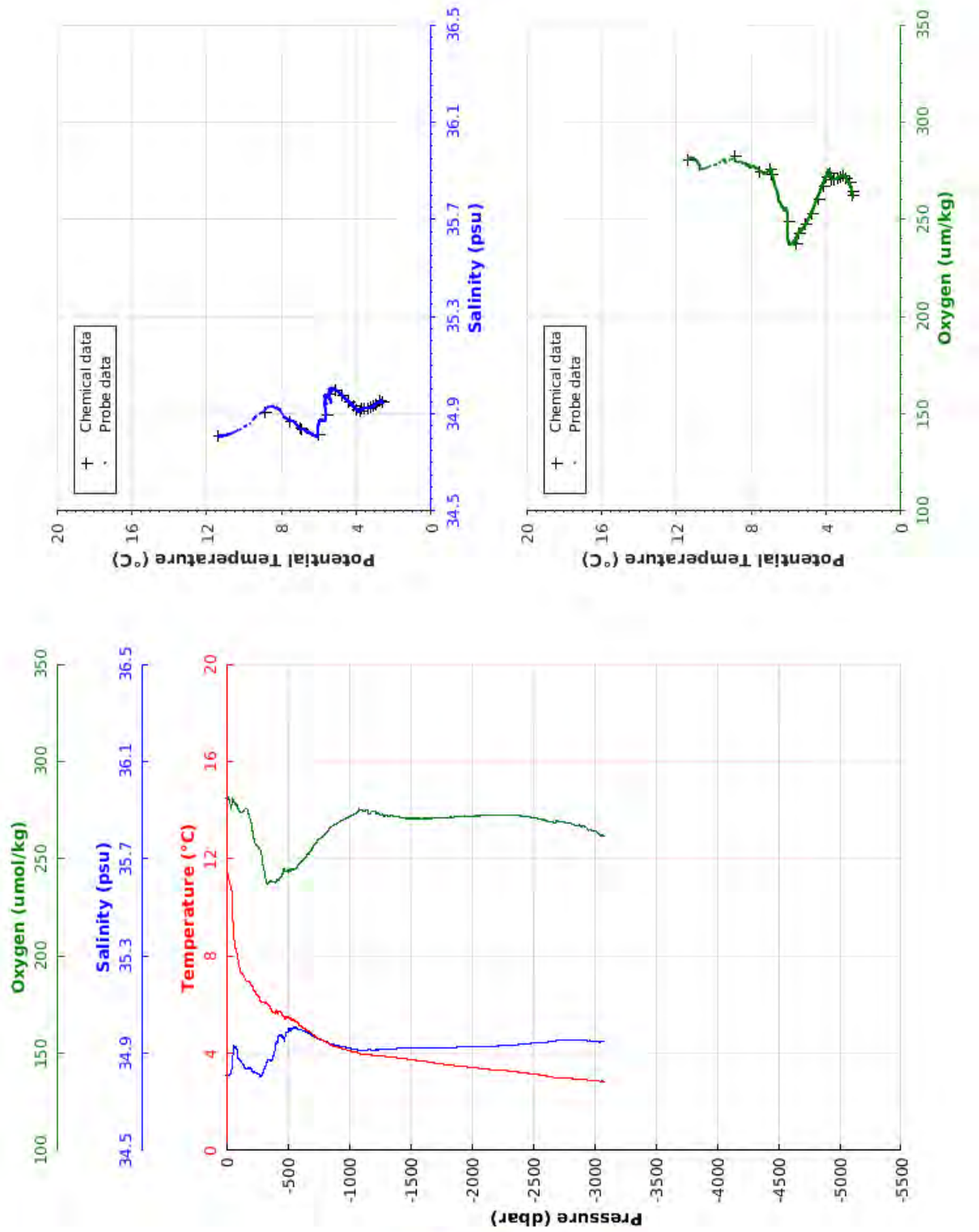
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.990	34.977	275.2	11.990	3050.0	2.768	34.936	255.2	2.517
10.0	11.951	34.982	274.8	11.949	3081.0	2.726	34.932	253.4	2.473
20.0	11.679	34.958	273.8	11.676					
30.0	11.328	34.915	272.8	11.324					
40.0	11.100	34.891	272.2	11.095					
50.0	10.954	34.933	269.8	10.948					
100.0	8.469	34.975	259.7	8.459					
150.0	7.749	34.930	255.7	7.734					
200.0	7.216	34.888	251.4	7.197					
250.0	6.754	34.865	248.0	6.731					
300.0	6.205	34.844	245.6	6.178					
350.0	6.197	34.905	230.7	6.166					
400.0	5.556	34.869	241.3	5.522					
450.0	5.499	34.909	235.4	5.461					
500.0	5.008	34.884	252.9	4.968					
550.0	4.830	34.908	255.7	4.786					
600.0	4.679	34.919	259.6	4.631					
650.0	4.576	34.923	262.3	4.525					
700.0	4.509	34.927	264.3	4.454					
750.0	4.590	34.955	261.4	4.531					
800.0	4.530	34.956	262.2	4.467					
850.0	4.466	34.952	263.8	4.398					
900.0	4.383	34.946	265.7	4.313					
950.0	4.293	34.940	267.7	4.219					
1000.0	4.206	34.933	269.4	4.128					
1050.0	4.157	34.931	270.2	4.076					
1100.0	4.091	34.928	270.8	4.005					
1150.0	4.020	34.922	272.0	3.931					
1200.0	3.974	34.921	272.0	3.881					
1250.0	3.950	34.921	271.8	3.852					
1300.0	3.931	34.921	271.7	3.830					
1350.0	3.899	34.920	271.3	3.793					
1400.0	3.867	34.922	271.1	3.757					
1450.0	3.832	34.921	271.0	3.718					
1500.0	3.802	34.922	271.0	3.685					
1550.0	3.760	34.923	270.5	3.638					
1600.0	3.744	34.924	270.4	3.618					
1650.0	3.709	34.925	270.9	3.579					
1700.0	3.671	34.926	270.9	3.537					
1750.0	3.622	34.926	270.9	3.484					
1800.0	3.575	34.925	270.8	3.433					
1850.0	3.546	34.925	271.1	3.400					
1900.0	3.488	34.923	271.1	3.338					
1950.0	3.460	34.926	271.8	3.305					
2000.0	3.425	34.927	272.0	3.266					
2050.0	3.398	34.928	272.2	3.235					
2100.0	3.368	34.929	272.3	3.201					
2150.0	3.335	34.929	272.4	3.163					
2200.0	3.291	34.930	272.5	3.115					
2250.0	3.269	34.931	272.4	3.089					
2300.0	3.242	34.934	272.3	3.057					
2350.0	3.222	34.935	272.3	3.033					
2400.0	3.188	34.937	272.3	2.995					
2450.0	3.169	34.939	272.0	2.971					
2500.0	3.147	34.942	271.7	2.944					
2550.0	3.105	34.942	269.4	2.898					
2600.0	3.081	34.943	268.7	2.870					
2650.0	3.047	34.941	266.9	2.831					
2700.0	3.032	34.943	266.4	2.812					
2750.0	2.999	34.945	266.3	2.775					
2800.0	2.976	34.944	264.8	2.747					
2850.0	2.959	34.945	264.2	2.724					
2900.0	2.906	34.943	261.5	2.667					
2950.0	2.882	34.942	260.5	2.639					
3000.0	2.832	34.940	258.5	2.585					



Station: 51

Cruise	: BOCATS 2016			
Station	: 52	Cast	: 1	
Date	: 06/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3056 m	Organism	: CSIC/IIM VIGO	
Position	: N 54 23.28 W 025 49.85			

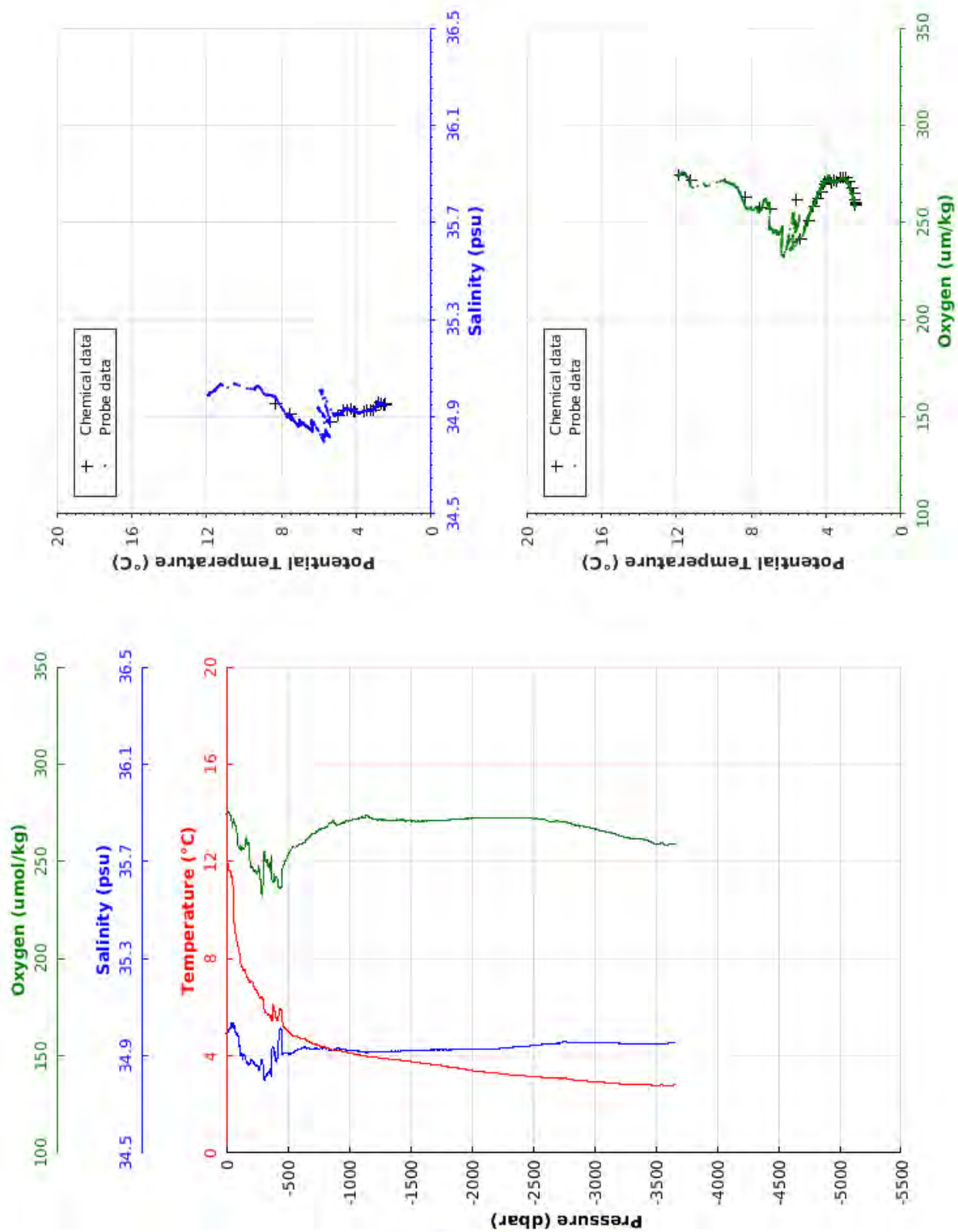
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.377	34.807	281.1	11.377	3050.0	2.847	34.947	261.6	2.594
10.0	11.369	34.810	280.9	11.368	3093.0	2.843	34.947	261.5	2.585
20.0	11.158	34.810	281.2	11.155					
30.0	10.960	34.813	280.3	10.956					
40.0	10.763	34.818	277.5	10.759					
50.0	9.677	34.861	279.3	9.672					
100.0	7.672	34.877	276.3	7.662					
150.0	7.074	34.842	274.7	7.060					
200.0	6.823	34.838	270.2	6.805					
250.0	6.422	34.818	256.9	6.400					
300.0	6.085	34.820	249.1	6.059					
350.0	5.955	34.874	237.2	5.925					
400.0	5.676	34.916	238.2	5.642					
450.0	5.649	34.975	240.4	5.611					
500.0	5.457	34.985	244.0	5.415					
550.0	5.372	35.008	244.0	5.326					
600.0	5.138	34.997	247.6	5.088					
650.0	4.997	34.989	250.5	4.944					
700.0	4.807	34.975	254.5	4.751					
750.0	4.595	34.958	259.6	4.536					
800.0	4.496	34.951	262.1	4.433					
850.0	4.337	34.939	265.8	4.271					
900.0	4.265	34.934	267.9	4.195					
950.0	4.177	34.927	269.9	4.104					
1000.0	4.110	34.922	271.4	4.033					
1050.0	4.051	34.917	273.0	3.970					
1100.0	3.978	34.911	275.2	3.893					
1150.0	3.929	34.910	275.1	3.841					
1200.0	3.909	34.912	274.5	3.816					
1250.0	3.897	34.915	272.8	3.800					
1300.0	3.863	34.917	272.3	3.762					
1350.0	3.838	34.917	272.3	3.733					
1400.0	3.809	34.920	271.4	3.700					
1450.0	3.781	34.921	270.7	3.668					
1500.0	3.752	34.922	270.8	3.635					
1550.0	3.706	34.924	270.7	3.585					
1600.0	3.684	34.923	270.7	3.559					
1650.0	3.640	34.923	270.8	3.510					
1700.0	3.596	34.923	270.9	3.463					
1750.0	3.555	34.924	271.1	3.417					
1800.0	3.528	34.924	271.2	3.387					
1850.0	3.498	34.924	271.3	3.352					
1900.0	3.465	34.926	271.8	3.315					
1950.0	3.452	34.926	271.8	3.298					
2000.0	3.421	34.926	271.9	3.262					
2050.0	3.389	34.927	272.0	3.226					
2100.0	3.361	34.927	272.2	3.193					
2150.0	3.329	34.929	272.2	3.157					
2200.0	3.313	34.930	272.3	3.137					
2250.0	3.295	34.931	272.4	3.114					
2300.0	3.277	34.932	272.3	3.092					
2350.0	3.250	34.934	272.3	3.060					
2400.0	3.216	34.937	272.1	3.022					
2450.0	3.181	34.939	271.7	2.982					
2500.0	3.149	34.941	271.2	2.946					
2550.0	3.111	34.943	270.5	2.904					
2600.0	3.075	34.945	269.7	2.864					
2650.0	3.025	34.949	269.1	2.810					
2700.0	3.003	34.953	269.4	2.783					
2750.0	2.987	34.953	268.9	2.762					
2800.0	2.976	34.953	268.4	2.746					
2850.0	2.937	34.952	266.9	2.703					
2900.0	2.923	34.953	266.7	2.685					
2950.0	2.892	34.951	264.9	2.649					
3000.0	2.882	34.951	264.1	2.634					



Station: 52

Cruise	: BOCATS 2016			
Station	: 53	Cast	: 1	
Date	: 07/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3610 m	Organism	: CSIC/IIM VIGO	
Position	: N 54 45.72			
	W 026 7.21			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.888	34.990	274.1	11.887	3050.0	2.910	34.954	265.8	2.655
10.0	11.889	34.989	274.3	11.888	3100.0	2.893	34.954	265.2	2.634
20.0	11.646	35.004	275.5	11.643	3150.0	2.878	34.953	264.5	2.614
30.0	11.575	35.008	275.1	11.571	3200.0	2.852	34.952	263.4	2.584
40.0	11.428	35.021	273.5	11.423	3250.0	2.841	34.951	262.6	2.567
50.0	11.268	35.034	270.2	11.262	3300.0	2.829	34.950	261.8	2.550
100.0	8.392	34.983	260.0	8.382	3350.0	2.821	34.951	261.5	2.537
150.0	7.529	34.906	256.3	7.514	3400.0	2.817	34.951	261.4	2.527
200.0	7.062	34.883	249.2	7.043	3450.0	2.801	34.949	260.2	2.507
250.0	6.634	34.860	243.9	6.612	3500.0	2.783	34.946	258.7	2.484
300.0	6.299	34.877	233.1	6.272	3550.0	2.801	34.951	259.6	2.496
350.0	5.661	34.834	247.3	5.631	3600.0	2.786	34.950	258.4	2.475
400.0	5.718	34.898	239.9	5.684	3650.0	2.796	34.952	259.1	2.479
450.0	5.899	35.011	236.4	5.860	3664.0	2.799	34.953	259.3	2.480
500.0	5.022	34.913	252.0	4.981					
550.0	4.803	34.915	257.4	4.759					
600.0	4.737	34.927	258.7	4.690					
650.0	4.630	34.932	260.7	4.579					
700.0	4.514	34.929	263.8	4.459					
750.0	4.421	34.929	265.9	4.362					
800.0	4.371	34.932	266.9	4.309					
850.0	4.262	34.925	269.6	4.197					
900.0	4.245	34.929	269.2	4.176					
950.0	4.185	34.927	269.8	4.112					
1000.0	4.132	34.924	270.6	4.054					
1050.0	4.073	34.921	271.5	3.992					
1100.0	4.021	34.918	272.4	3.936					
1150.0	3.957	34.914	273.7	3.868					
1200.0	3.942	34.918	271.9	3.850					
1250.0	3.918	34.918	271.5	3.821					
1300.0	3.883	34.919	271.2	3.782					
1350.0	3.856	34.919	271.0	3.750					
1400.0	3.827	34.919	271.3	3.718					
1450.0	3.801	34.920	271.2	3.687					
1500.0	3.768	34.921	271.1	3.651					
1550.0	3.729	34.922	270.6	3.608					
1600.0	3.694	34.923	270.7	3.568					
1650.0	3.667	34.924	270.8	3.538					
1700.0	3.638	34.925	270.7	3.505					
1750.0	3.599	34.925	271.0	3.461					
1800.0	3.548	34.924	271.3	3.406					
1850.0	3.521	34.927	271.5	3.375					
1900.0	3.492	34.928	271.7	3.341					
1950.0	3.452	34.927	271.9	3.298					
2000.0	3.394	34.926	272.1	3.236					
2050.0	3.359	34.926	272.3	3.196					
2100.0	3.332	34.927	272.4	3.165					
2150.0	3.308	34.928	272.5	3.137					
2200.0	3.289	34.930	272.6	3.113					
2250.0	3.262	34.931	272.7	3.082					
2300.0	3.224	34.933	272.5	3.039					
2350.0	3.212	34.936	272.5	3.023					
2400.0	3.196	34.937	272.4	3.003					
2450.0	3.168	34.940	272.4	2.970					
2500.0	3.140	34.943	272.1	2.937					
2550.0	3.126	34.946	271.8	2.918					
2600.0	3.107	34.948	271.5	2.895					
2650.0	3.076	34.947	270.3	2.860					
2700.0	3.072	34.952	270.8	2.851					
2750.0	3.073	34.959	270.4	2.847					
2800.0	3.025	34.954	269.7	2.794					
2850.0	2.991	34.952	268.5	2.756					
2900.0	2.982	34.955	268.3	2.742					
2950.0	2.955	34.955	267.6	2.711					
3000.0	2.934	34.956	266.9	2.685					

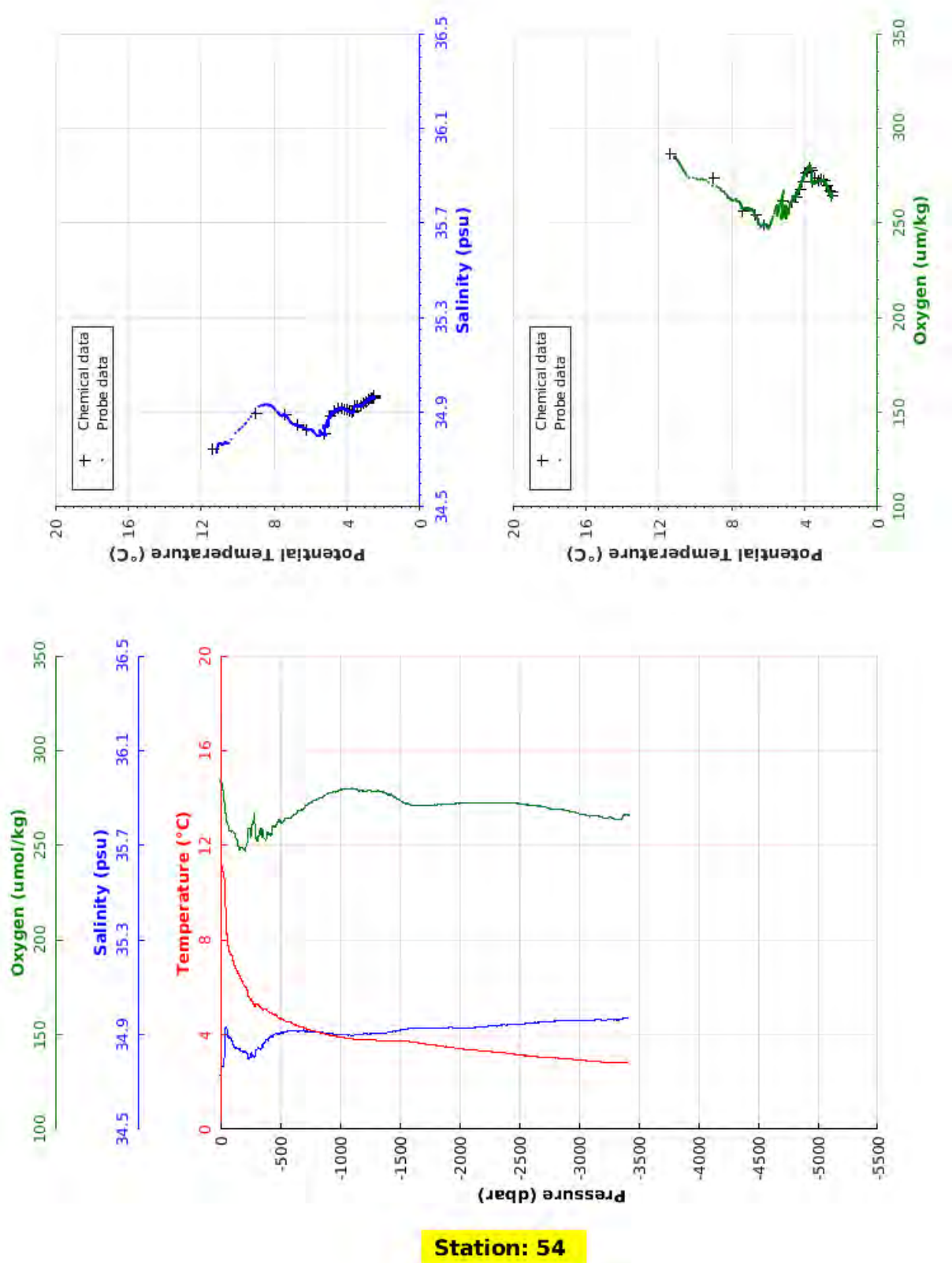


**Station: 53**



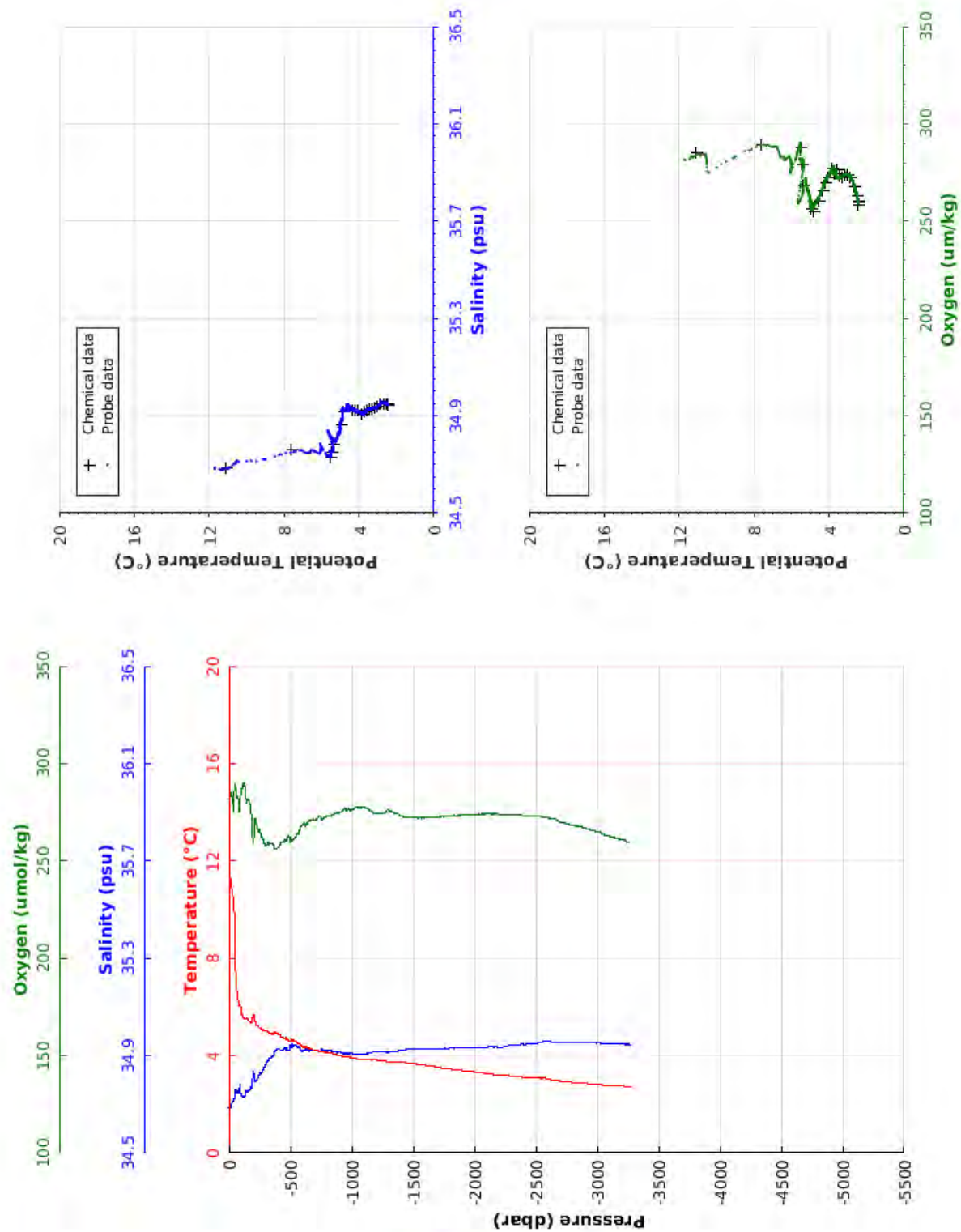
Cruise	: BOCATS 2016			
Station	: 54	Cast	: 1	
Date	: 07/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3378 m	Organism	: CSIC/IIM VIGO	
Position	: N 55 8.95 W 026 24.67			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.150	34.731	283.9	11.150	3050.0	2.909	34.960	266.2	2.655
10.0	11.096	34.756	285.1	11.095	3100.0	2.886	34.962	265.7	2.627
20.0	10.913	34.767	282.1	10.910	3150.0	2.866	34.963	265.6	2.602
30.0	10.668	34.775	277.9	10.664	3200.0	2.837	34.961	264.7	2.568
40.0	9.602	34.851	273.2	9.597	3250.0	2.835	34.965	264.5	2.561
50.0	8.430	34.933	266.6	8.424	3300.0	2.816	34.963	263.9	2.538
100.0	7.245	34.875	257.6	7.236	3350.0	2.804	34.963	263.5	2.520
150.0	6.584	34.841	251.5	6.571	3400.0	2.817	34.969	266.1	2.528
200.0	6.070	34.828	247.8	6.052	3425.0	2.820	34.969	266.2	2.527
250.0	5.511	34.803	259.3	5.490					
300.0	5.299	34.835	254.3	5.274					
350.0	5.123	34.853	255.0	5.095					
400.0	4.953	34.879	257.1	4.921					
450.0	4.839	34.898	260.1	4.804					
500.0	4.694	34.907	262.6	4.655					
550.0	4.549	34.911	264.2	4.506					
600.0	4.483	34.916	264.6	4.436					
650.0	4.359	34.915	268.0	4.309					
700.0	4.308	34.919	269.1	4.255					
750.0	4.192	34.912	272.3	4.135					
800.0	4.131	34.911	273.9	4.071					
850.0	4.070	34.909	275.2	4.005					
900.0	3.994	34.905	277.2	3.927					
950.0	3.940	34.903	278.0	3.868					
1000.0	3.895	34.900	279.0	3.820					
1050.0	3.860	34.898	279.7	3.781					
1100.0	3.825	34.897	279.9	3.742					
1150.0	3.810	34.900	279.2	3.723					
1200.0	3.804	34.903	278.6	3.712					
1250.0	3.772	34.903	279.0	3.676					
1300.0	3.764	34.904	278.4	3.664					
1350.0	3.745	34.905	278.3	3.641					
1400.0	3.750	34.911	276.8	3.642					
1450.0	3.749	34.914	275.6	3.636					
1500.0	3.737	34.918	274.2	3.620					
1550.0	3.727	34.923	272.3	3.606					
1600.0	3.699	34.926	271.3	3.574					
1650.0	3.662	34.926	271.1	3.533					
1700.0	3.622	34.927	271.0	3.488					
1750.0	3.584	34.927	271.2	3.446					
1800.0	3.547	34.928	271.4	3.405					
1850.0	3.508	34.927	271.6	3.362					
1900.0	3.490	34.929	271.7	3.339					
1950.0	3.447	34.930	271.9	3.292					
2000.0	3.406	34.928	272.0	3.247					
2050.0	3.377	34.928	272.3	3.214					
2100.0	3.349	34.929	272.4	3.181					
2150.0	3.334	34.930	272.5	3.162					
2200.0	3.302	34.932	272.5	3.126					
2250.0	3.292	34.936	272.5	3.112					
2300.0	3.259	34.936	272.5	3.074					
2350.0	3.252	34.941	272.6	3.062					
2400.0	3.213	34.941	272.3	3.019					
2450.0	3.186	34.943	272.3	2.987					
2500.0	3.144	34.944	272.0	2.942					
2550.0	3.120	34.948	271.5	2.913					
2600.0	3.078	34.947	271.2	2.867					
2650.0	3.065	34.952	270.7	2.849					
2700.0	3.051	34.953	270.5	2.831					
2750.0	3.026	34.954	269.4	2.800					
2800.0	3.012	34.955	269.0	2.781					
2850.0	3.005	34.961	268.9	2.769					
2900.0	2.983	34.961	268.5	2.743					
2950.0	2.965	34.961	267.8	2.720					
3000.0	2.930	34.958	266.7	2.680					



Cruise	: BOCATS 2016			
Station	: 55	Cast	: 1	
Date	: 07/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3231 m	Organism	: CSIC/IIM VIGO	
Position	: N 55 30.37 W 026 42.45			

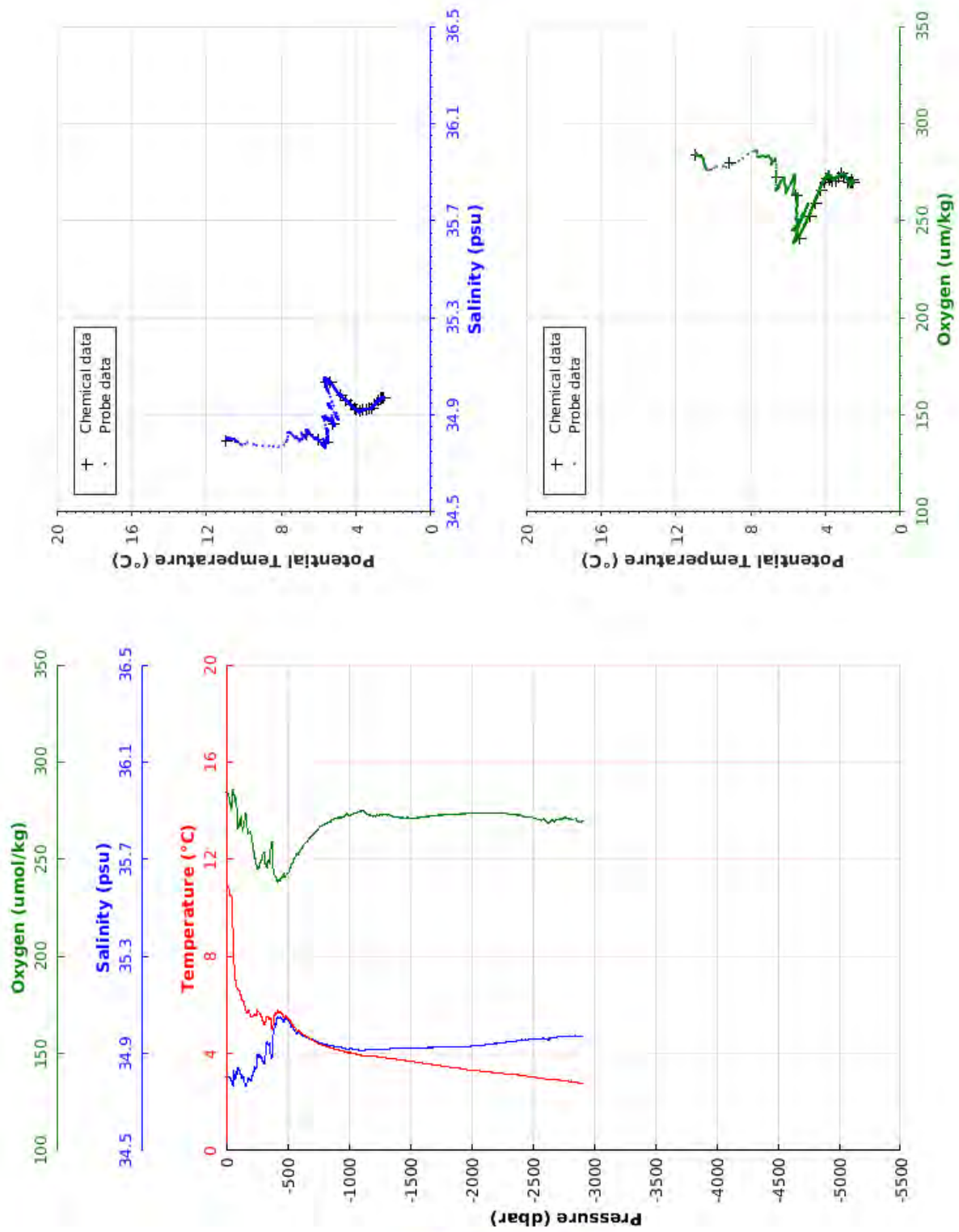
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.692	34.685	281.5	11.692	3050.0	2.785	34.950	263.6	2.533
10.0	11.288	34.680	282.9	11.287	3100.0	2.772	34.948	262.7	2.516
20.0	10.877	34.688	284.3	10.875	3150.0	2.756	34.947	261.8	2.495
30.0	10.543	34.713	281.4	10.540	3200.0	2.748	34.947	261.2	2.481
40.0	10.503	34.713	275.6	10.498	3250.0	2.730	34.946	259.6	2.459
50.0	8.150	34.740	286.8	8.145	3278.0	2.733	34.946	259.7	2.459
100.0	5.797	34.745	282.0	5.788					
150.0	5.472	34.752	280.1	5.460					
200.0	5.684	34.837	260.0	5.668					
250.0	5.141	34.821	266.0	5.121					
300.0	5.027	34.864	257.9	5.004					
350.0	4.884	34.892	259.2	4.856					
400.0	4.892	34.926	256.7	4.861					
450.0	4.715	34.925	259.9	4.680					
500.0	4.627	34.932	261.6	4.588					
550.0	4.572	34.941	262.6	4.529					
600.0	4.346	34.919	268.4	4.300					
650.0	4.318	34.927	269.3	4.268					
700.0	4.231	34.923	271.2	4.178					
750.0	4.152	34.917	273.0	4.095					
800.0	4.126	34.920	273.0	4.065					
850.0	4.069	34.917	273.5	4.005					
900.0	4.017	34.915	274.5	3.949					
950.0	3.942	34.909	276.7	3.870					
1000.0	3.915	34.910	275.9	3.839					
1050.0	3.868	34.907	277.6	3.789					
1100.0	3.836	34.907	277.5	3.753					
1150.0	3.824	34.911	275.9	3.737					
1200.0	3.822	34.916	274.3	3.731					
1250.0	3.798	34.917	274.2	3.702					
1300.0	3.747	34.914	276.1	3.648					
1350.0	3.741	34.918	274.9	3.637					
1400.0	3.729	34.922	273.3	3.621					
1450.0	3.702	34.926	272.5	3.589					
1500.0	3.662	34.925	272.5	3.546					
1550.0	3.647	34.927	272.0	3.526					
1600.0	3.608	34.927	272.1	3.484					
1650.0	3.569	34.928	272.3	3.441					
1700.0	3.529	34.928	272.6	3.397					
1750.0	3.490	34.930	272.8	3.354					
1800.0	3.453	34.930	272.9	3.312					
1850.0	3.413	34.930	273.3	3.269					
1900.0	3.386	34.931	273.4	3.237					
1950.0	3.352	34.932	273.8	3.199					
2000.0	3.331	34.933	273.7	3.174					
2050.0	3.297	34.935	273.9	3.135					
2100.0	3.265	34.935	274.2	3.099					
2150.0	3.234	34.936	274.1	3.064					
2200.0	3.195	34.934	273.9	3.021					
2250.0	3.179	34.937	273.9	3.000					
2300.0	3.165	34.941	273.7	2.981					
2350.0	3.130	34.943	273.6	2.942					
2400.0	3.101	34.946	273.3	2.909					
2450.0	3.091	34.949	273.0	2.894					
2500.0	3.079	34.950	273.1	2.877					
2550.0	3.066	34.955	272.7	2.860					
2600.0	3.038	34.958	272.1	2.828					
2650.0	2.997	34.956	271.7	2.782					
2700.0	2.954	34.954	270.1	2.735					
2750.0	2.927	34.954	269.3	2.704					
2800.0	2.899	34.953	268.2	2.671					
2850.0	2.884	34.954	267.7	2.651					
2900.0	2.861	34.953	267.0	2.624					
2950.0	2.837	34.952	265.9	2.595					
3000.0	2.810	34.951	264.9	2.563					



Station: 55

Cruise	: BOCATS 2016			
Station	: 56	Cast	: 1	
Date	: 07/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 2881 m	Organism	: CSIC/IIM VIGO	
Position	: N 55 52.98 W 026 59.89			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.954	34.804	284.7	10.954
10.0	10.917	34.805	284.3	10.916
20.0	10.828	34.803	283.4	10.826
30.0	10.529	34.802	281.3	10.526
40.0	10.458	34.793	278.7	10.454
50.0	9.943	34.781	277.2	9.937
100.0	6.656	34.840	265.7	6.647
150.0	5.886	34.784	268.8	5.873
200.0	5.549	34.787	263.9	5.532
250.0	5.656	34.858	247.3	5.635
300.0	5.315	34.869	251.5	5.291
350.0	5.412	34.933	249.5	5.384
400.0	5.654	35.019	241.3	5.620
450.0	5.648	35.047	239.6	5.610
500.0	5.456	35.039	242.1	5.414
550.0	5.142	35.004	248.4	5.097
600.0	4.900	34.986	253.5	4.852
650.0	4.713	34.968	258.3	4.662
700.0	4.567	34.959	261.5	4.512
750.0	4.415	34.947	265.3	4.356
800.0	4.321	34.939	267.5	4.259
850.0	4.243	34.934	269.4	4.178
900.0	4.151	34.927	271.3	4.082
950.0	4.104	34.924	271.3	4.031
1000.0	4.027	34.919	273.2	3.951
1050.0	3.984	34.916	273.8	3.903
1100.0	3.931	34.913	274.5	3.847
1150.0	3.913	34.916	273.3	3.825
1200.0	3.896	34.919	272.1	3.804
1250.0	3.859	34.918	272.6	3.763
1300.0	3.817	34.918	272.8	3.716
1350.0	3.783	34.920	272.2	3.678
1400.0	3.753	34.922	271.7	3.644
1450.0	3.721	34.923	271.4	3.608
1500.0	3.682	34.923	271.4	3.565
1550.0	3.642	34.923	271.3	3.521
1600.0	3.603	34.924	271.8	3.479
1650.0	3.567	34.925	272.1	3.438
1700.0	3.531	34.925	272.4	3.398
1750.0	3.491	34.925	272.6	3.354
1800.0	3.450	34.926	272.7	3.310
1850.0	3.416	34.926	273.1	3.271
1900.0	3.391	34.927	273.3	3.242
1950.0	3.343	34.929	273.6	3.190
2000.0	3.314	34.930	273.7	3.156
2050.0	3.288	34.932	273.9	3.127
2100.0	3.266	34.935	273.8	3.100
2150.0	3.233	34.938	273.7	3.063
2200.0	3.204	34.941	273.8	3.030
2250.0	3.183	34.944	273.6	3.004
2300.0	3.154	34.948	273.3	2.971
2350.0	3.129	34.950	273.0	2.942
2400.0	3.111	34.956	272.9	2.919
2450.0	3.063	34.956	271.7	2.867
2500.0	3.037	34.960	271.6	2.836
2550.0	2.986	34.961	270.2	2.781
2600.0	2.944	34.960	270.4	2.736
2650.0	2.935	34.965	269.7	2.721
2700.0	2.913	34.968	270.3	2.695
2750.0	2.882	34.972	271.0	2.660
2800.0	2.840	34.970	270.7	2.613
2850.0	2.820	34.973	270.8	2.588
2900.0	2.780	34.970	269.1	2.544
2917.0	2.782	34.973	270.4	2.545

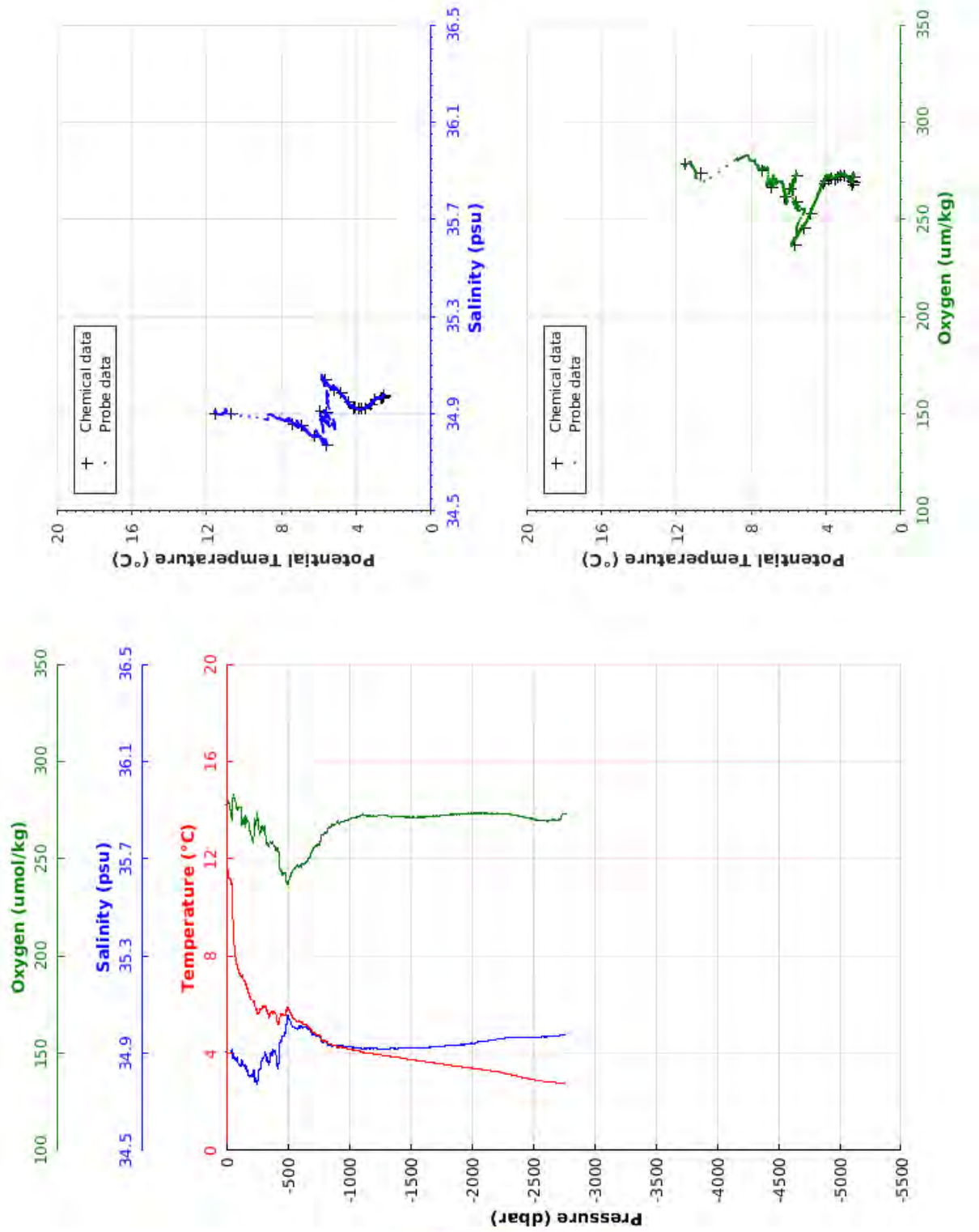


Station: 56



Cruise	: BOCATS 2016		
Station	: 57	Cast	: 1
Date	: 08/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2737 m	Organism	: CSIC/IIM VIGO
Position	: N 56 15.34 W 027 17.91		

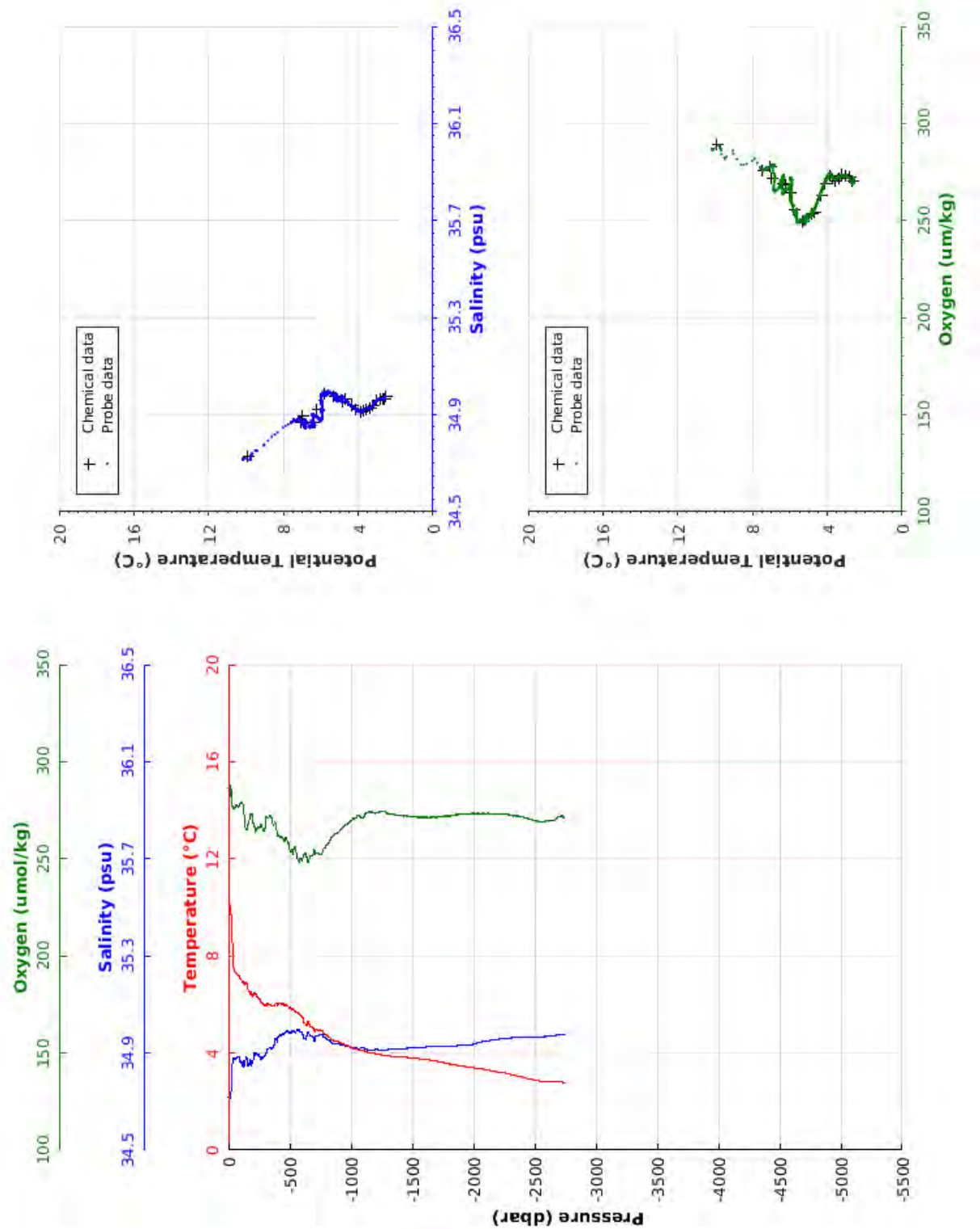
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.549	34.908	277.7	11.549
10.0	11.528	34.907	277.9	11.526
20.0	11.228	34.899	279.3	11.225
30.0	11.187	34.900	277.4	11.184
40.0	11.009	34.909	274.4	11.004
50.0	10.715	34.899	270.4	10.709
100.0	7.358	34.860	276.3	7.349
150.0	6.955	34.852	267.6	6.941
200.0	6.220	34.806	264.2	6.203
250.0	5.744	34.787	269.5	5.723
300.0	5.913	34.877	265.7	5.887
350.0	5.479	34.850	256.8	5.450
400.0	5.675	34.911	256.1	5.641
450.0	5.625	34.953	243.6	5.587
500.0	5.878	35.053	237.3	5.834
550.0	5.431	35.008	244.2	5.385
600.0	5.301	35.010	246.0	5.251
650.0	5.161	35.007	247.9	5.108
700.0	4.911	34.983	253.1	4.854
750.0	4.759	34.972	257.0	4.699
800.0	4.509	34.948	262.6	4.445
850.0	4.361	34.933	266.1	4.295
900.0	4.262	34.926	268.4	4.192
950.0	4.236	34.930	269.1	4.163
1000.0	4.178	34.927	270.3	4.100
1050.0	4.114	34.923	271.2	4.032
1100.0	4.063	34.921	272.1	3.978
1150.0	4.019	34.920	272.0	3.930
1200.0	3.975	34.919	272.0	3.881
1250.0	3.938	34.919	272.1	3.841
1300.0	3.901	34.918	272.2	3.799
1350.0	3.864	34.920	271.3	3.758
1400.0	3.832	34.919	271.7	3.723
1450.0	3.791	34.921	271.5	3.678
1500.0	3.747	34.922	271.3	3.629
1550.0	3.706	34.923	271.1	3.585
1600.0	3.668	34.924	271.4	3.543
1650.0	3.632	34.924	271.5	3.503
1700.0	3.596	34.925	271.7	3.462
1750.0	3.563	34.929	272.3	3.426
1800.0	3.524	34.930	272.4	3.382
1850.0	3.487	34.933	272.7	3.341
1900.0	3.457	34.934	272.9	3.307
1950.0	3.423	34.938	273.1	3.269
2000.0	3.389	34.942	273.2	3.230
2050.0	3.347	34.946	273.5	3.185
2100.0	3.316	34.950	273.3	3.149
2150.0	3.283	34.952	273.2	3.112
2200.0	3.249	34.957	273.2	3.073
2250.0	3.200	34.960	273.1	3.021
2300.0	3.153	34.964	272.9	2.970
2350.0	3.088	34.965	272.2	2.901
2400.0	3.025	34.966	271.8	2.834
2450.0	2.962	34.967	271.0	2.767
2500.0	2.924	34.967	270.4	2.725
2550.0	2.877	34.967	269.9	2.674
2600.0	2.838	34.968	269.5	2.631
2650.0	2.811	34.971	269.9	2.600
2700.0	2.789	34.972	269.9	2.573
2750.0	2.773	34.977	273.0	2.552
2771.0	2.775	34.978	273.4	2.552



Station: 57

Cruise	: BOCATS 2016		
Station	: 58	Cast	: 1
Date	: 08/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2726 m	Organism	: CSIC/IIM VIGO
Position	: N 56 37.86 W 027 35.31		

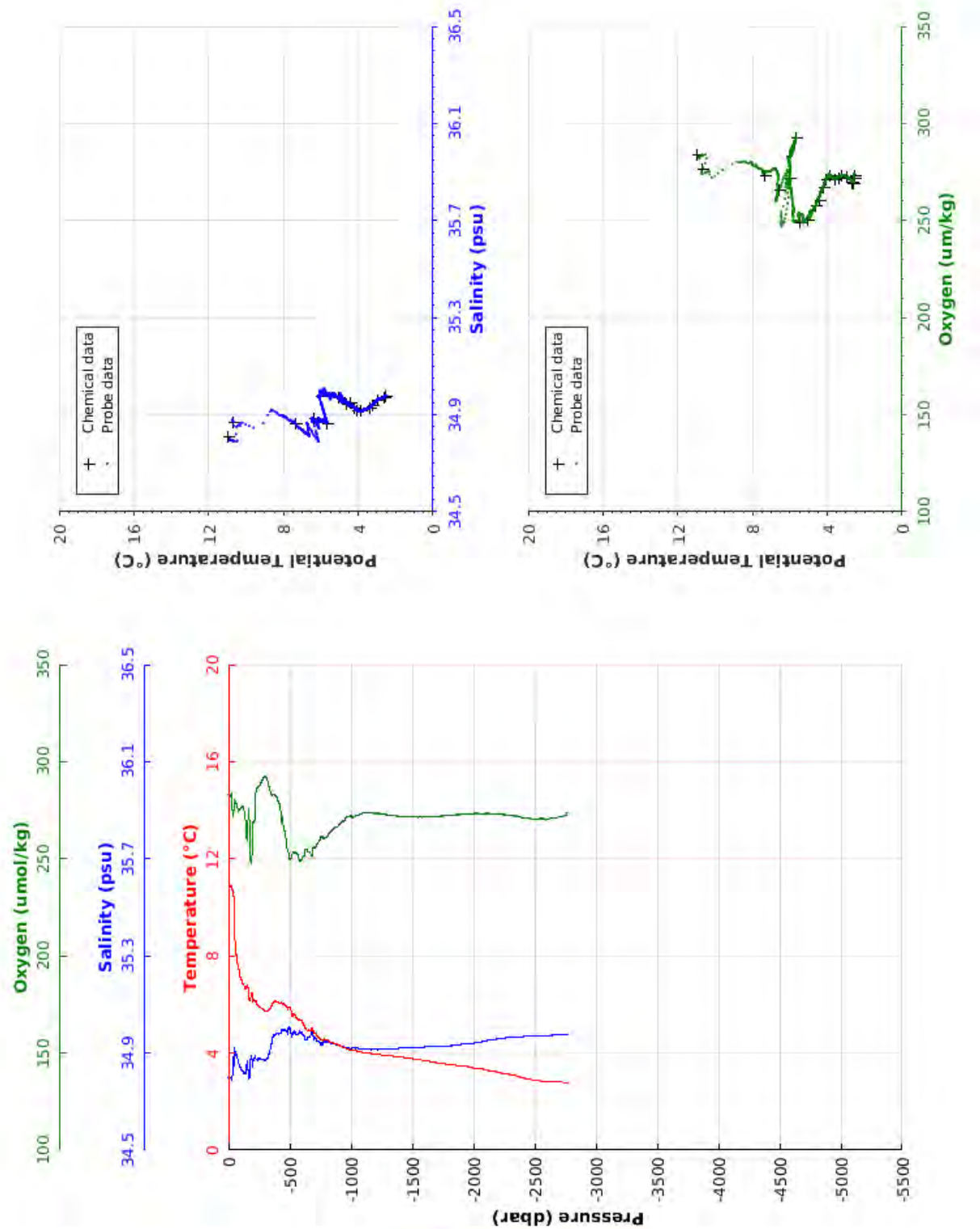
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.156	34.717	286.6	10.156
10.0	10.120	34.720	286.4	10.119
20.0	9.737	34.733	287.5	9.734
30.0	8.829	34.793	281.7	8.826
40.0	7.572	34.871	276.7	7.569
50.0	7.414	34.878	276.1	7.410
100.0	7.007	34.864	278.2	6.998
150.0	6.862	34.879	265.6	6.848
200.0	6.335	34.856	272.5	6.317
250.0	6.242	34.891	266.0	6.220
300.0	5.950	34.888	265.2	5.924
350.0	5.977	34.921	271.3	5.946
400.0	5.949	34.945	263.9	5.914
450.0	6.015	34.982	260.2	5.975
500.0	5.889	34.987	257.9	5.846
550.0	5.674	34.985	255.7	5.626
600.0	5.508	34.989	249.8	5.457
650.0	5.275	34.988	248.2	5.220
700.0	4.979	34.959	252.8	4.922
750.0	4.960	34.977	252.0	4.899
800.0	4.732	34.961	256.2	4.667
850.0	4.545	34.942	261.1	4.477
900.0	4.447	34.937	263.5	4.376
950.0	4.346	34.931	266.6	4.271
1000.0	4.238	34.924	269.1	4.160
1050.0	4.157	34.920	271.2	4.075
1100.0	4.110	34.922	271.2	4.024
1150.0	4.004	34.912	274.0	3.915
1200.0	3.972	34.915	273.4	3.879
1250.0	3.926	34.911	274.4	3.829
1300.0	3.894	34.914	273.4	3.793
1350.0	3.857	34.916	273.1	3.752
1400.0	3.839	34.917	272.5	3.730
1450.0	3.826	34.919	272.1	3.712
1500.0	3.804	34.920	271.8	3.687
1550.0	3.769	34.923	271.2	3.647
1600.0	3.739	34.924	271.3	3.613
1650.0	3.693	34.926	271.4	3.563
1700.0	3.660	34.926	271.7	3.526
1750.0	3.612	34.927	271.8	3.474
1800.0	3.552	34.928	272.5	3.410
1850.0	3.506	34.929	272.5	3.360
1900.0	3.464	34.931	272.8	3.314
1950.0	3.423	34.932	273.1	3.269
2000.0	3.392	34.936	273.2	3.234
2050.0	3.363	34.943	273.3	3.200
2100.0	3.314	34.948	273.2	3.148
2150.0	3.269	34.952	273.2	3.098
2200.0	3.216	34.957	273.0	3.042
2250.0	3.181	34.959	272.9	3.002
2300.0	3.123	34.962	272.6	2.941
2350.0	3.066	34.966	272.1	2.879
2400.0	3.000	34.967	271.7	2.810
2450.0	2.942	34.966	270.6	2.747
2500.0	2.879	34.966	269.7	2.681
2550.0	2.840	34.966	269.0	2.638
2600.0	2.816	34.970	269.4	2.610
2650.0	2.800	34.970	269.5	2.589
2700.0	2.800	34.975	271.4	2.584
2750.0	2.782	34.975	271.0	2.561
2758.0	2.782	34.974	271.2	2.560



Station: 58

Cruise	: BOCATS 2016		
Station	: 59	Cast	: 1
Date	: 08/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2752 m	Organism	: CSIC/IIM VIGO
Position	: N 57 0.78 W 027 52.96		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.890	34.798	282.9	10.890
10.0	10.875	34.797	282.8	10.874
20.0	10.856	34.797	282.7	10.854
30.0	10.767	34.794	283.4	10.763
40.0	10.690	34.873	274.1	10.685
50.0	9.099	34.866	279.2	9.094
100.0	7.078	34.841	275.2	7.069
150.0	6.698	34.842	264.2	6.684
200.0	6.141	34.846	258.9	6.124
250.0	5.909	34.875	287.0	5.887
300.0	5.727	34.870	292.2	5.701
350.0	5.948	34.930	284.0	5.917
400.0	6.100	34.981	281.7	6.065
450.0	6.012	34.992	269.8	5.972
500.0	5.863	34.999	251.6	5.819
550.0	5.479	34.979	253.4	5.433
600.0	5.309	34.985	248.8	5.259
650.0	4.940	34.961	254.4	4.887
700.0	4.792	34.954	256.4	4.736
750.0	4.613	34.944	259.8	4.553
800.0	4.552	34.948	261.0	4.489
850.0	4.419	34.940	264.6	4.352
900.0	4.319	34.932	266.9	4.249
950.0	4.211	34.925	269.7	4.137
1000.0	4.120	34.918	272.1	4.043
1050.0	4.087	34.920	272.2	4.006
1100.0	4.019	34.915	273.4	3.934
1150.0	3.988	34.914	273.7	3.899
1200.0	3.959	34.915	273.4	3.866
1250.0	3.922	34.915	273.2	3.825
1300.0	3.885	34.917	272.7	3.784
1350.0	3.871	34.918	272.3	3.765
1400.0	3.851	34.920	271.8	3.741
1450.0	3.801	34.921	271.8	3.687
1500.0	3.771	34.922	271.5	3.654
1550.0	3.727	34.923	271.5	3.606
1600.0	3.687	34.924	271.6	3.561
1650.0	3.652	34.927	271.7	3.523
1700.0	3.598	34.927	271.9	3.465
1750.0	3.565	34.927	272.0	3.427
1800.0	3.533	34.929	272.4	3.392
1850.0	3.501	34.931	272.5	3.355
1900.0	3.472	34.936	272.8	3.322
1950.0	3.438	34.939	273.0	3.283
2000.0	3.386	34.941	273.2	3.227
2050.0	3.349	34.944	273.4	3.187
2100.0	3.303	34.950	273.2	3.136
2150.0	3.253	34.954	273.3	3.083
2200.0	3.211	34.958	273.0	3.037
2250.0	3.158	34.961	272.8	2.979
2300.0	3.107	34.965	272.5	2.924
2350.0	3.067	34.966	272.1	2.881
2400.0	2.986	34.968	271.3	2.796
2450.0	2.925	34.968	270.8	2.731
2500.0	2.880	34.969	270.3	2.682
2550.0	2.850	34.971	270.8	2.648
2600.0	2.820	34.971	270.1	2.614
2650.0	2.812	34.973	271.2	2.601
2700.0	2.800	34.974	271.5	2.584
2750.0	2.790	34.976	272.3	2.569
2785.0	2.775	34.978	274.0	2.551

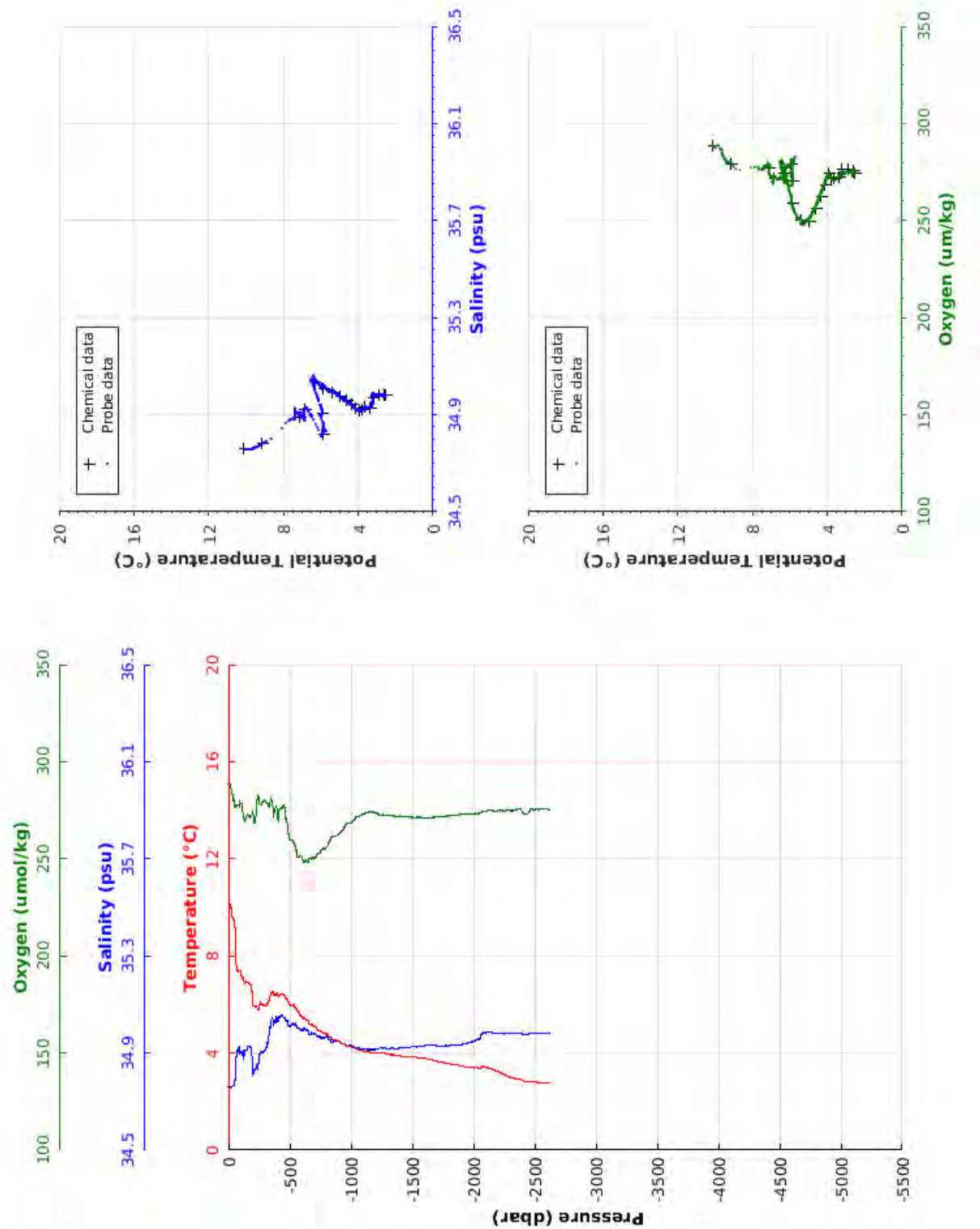


Station: 59



Cruise	: BOCATS 2016			
Station	: 60	Cast	: 1	
Date	: 08/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 2605 m	Organism	: CSIC/IIM VIGO	
Position	: N 57 22.83 W 028 10.37			

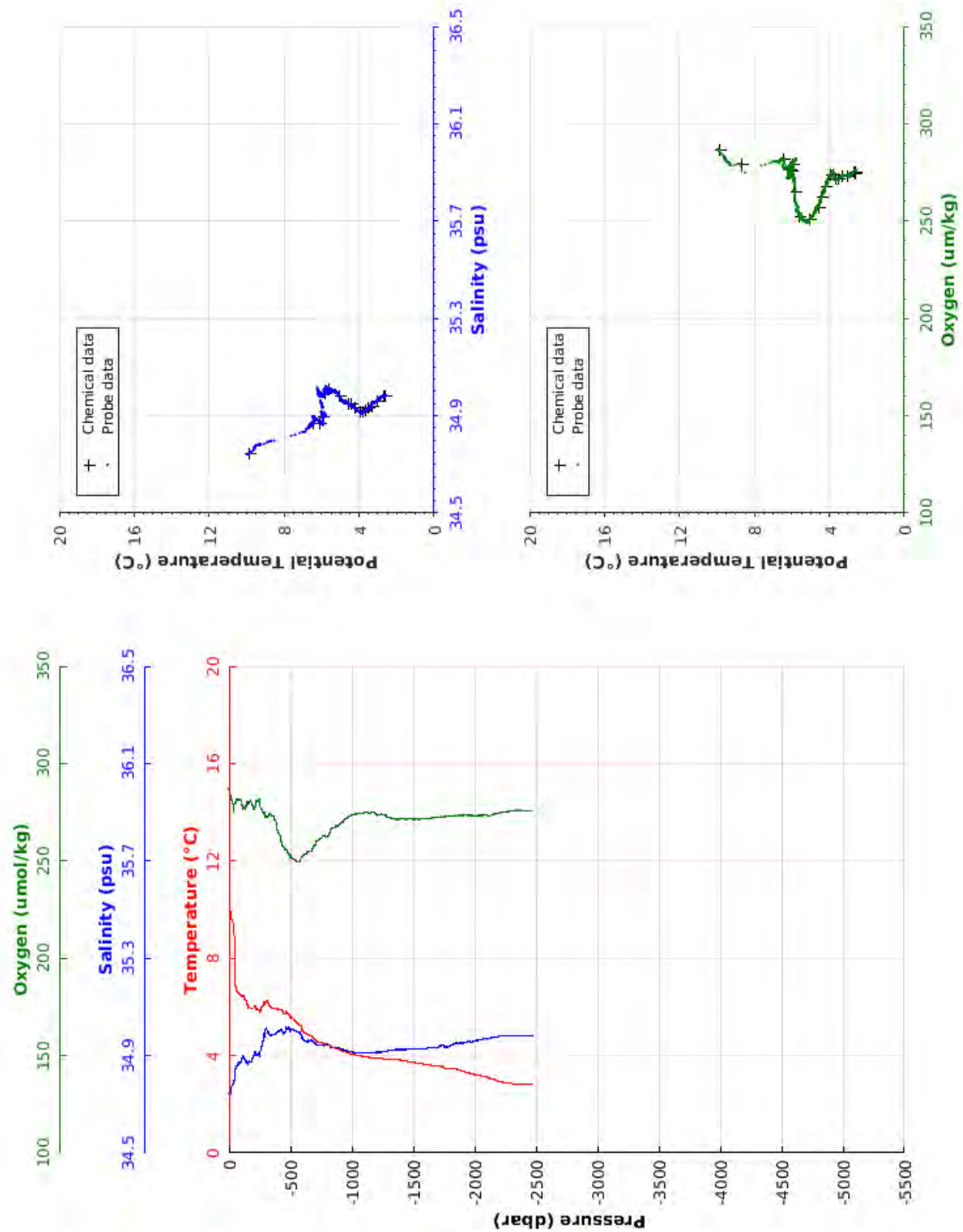
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.116	34.759	288.2	10.116
10.0	10.117	34.759	288.0	10.116
20.0	9.987	34.759	288.1	9.985
30.0	9.628	34.761	284.7	9.624
40.0	9.536	34.766	282.2	9.532
50.0	9.262	34.776	280.1	9.256
100.0	7.209	34.901	279.8	7.199
150.0	6.906	34.912	271.0	6.893
200.0	5.983	34.813	275.0	5.965
250.0	5.890	34.862	280.4	5.869
300.0	5.933	34.909	280.1	5.907
350.0	6.448	35.023	280.9	6.416
400.0	6.441	35.042	275.5	6.404
450.0	6.386	35.049	276.7	6.345
500.0	6.000	35.014	261.3	5.955
550.0	5.881	35.022	256.5	5.833
600.0	5.490	34.994	251.5	5.439
650.0	5.323	34.995	248.1	5.269
700.0	5.083	34.979	250.8	5.025
750.0	4.912	34.968	253.1	4.850
800.0	4.790	34.967	255.6	4.725
850.0	4.540	34.945	261.2	4.473
900.0	4.488	34.948	262.7	4.417
950.0	4.352	34.936	265.9	4.278
1000.0	4.263	34.930	268.3	4.185
1050.0	4.150	34.920	271.5	4.068
1100.0	4.085	34.917	272.8	4.000
1150.0	4.029	34.913	274.2	3.939
1200.0	4.004	34.915	274.0	3.911
1250.0	4.004	34.921	272.3	3.906
1300.0	3.944	34.918	272.4	3.843
1350.0	3.901	34.919	272.1	3.795
1400.0	3.875	34.920	272.1	3.765
1450.0	3.837	34.921	271.7	3.723
1500.0	3.824	34.925	271.3	3.706
1550.0	3.777	34.925	271.4	3.655
1600.0	3.765	34.929	271.1	3.639
1650.0	3.728	34.932	271.2	3.597
1700.0	3.662	34.930	271.5	3.527
1750.0	3.607	34.930	271.8	3.469
1800.0	3.558	34.929	272.2	3.416
1850.0	3.509	34.932	272.5	3.363
1900.0	3.468	34.935	272.8	3.318
1950.0	3.435	34.940	273.1	3.281
2000.0	3.395	34.947	273.2	3.236
2050.0	3.363	34.955	273.4	3.200
2100.0	3.413	34.983	274.5	3.244
2150.0	3.344	34.985	275.0	3.172
2200.0	3.245	34.982	274.7	3.070
2250.0	3.114	34.980	274.6	2.936
2300.0	3.002	34.980	274.9	2.821
2350.0	2.939	34.981	275.3	2.755
2400.0	2.860	34.977	274.3	2.672
2450.0	2.817	34.977	273.4	2.625
2500.0	2.801	34.980	275.1	2.604
2550.0	2.783	34.981	275.5	2.582
2600.0	2.769	34.981	275.5	2.563
2637.0	2.754	34.980	275.1	2.545



Station: 60

Cruise	: BOCATS 2016		
Station	: 61	Cast	: 1
Date	: 08/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2454 m	Organism	: CSIC/IIM VIGO
Position	: N 57 40.42 W 028 43.43		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.932	34.743	286.9	9.932
10.0	9.932	34.743	286.7	9.931
20.0	9.598	34.767	283.1	9.595
30.0	9.516	34.778	280.7	9.512
40.0	9.235	34.782	278.6	9.231
50.0	7.194	34.830	279.9	7.189
100.0	6.450	34.876	281.1	6.441
150.0	6.064	34.871	280.1	6.051
200.0	5.951	34.889	278.6	5.934
250.0	5.816	34.899	281.8	5.795
300.0	6.248	35.007	272.5	6.222
350.0	5.960	34.983	273.6	5.929
400.0	5.909	35.001	265.8	5.874
450.0	5.726	34.993	256.7	5.688
500.0	5.622	35.011	252.2	5.580
550.0	5.369	34.999	250.1	5.323
600.0	5.056	34.974	252.0	5.007
650.0	4.851	34.961	254.6	4.799
700.0	4.661	34.951	257.8	4.605
750.0	4.522	34.942	261.5	4.463
800.0	4.487	34.948	262.3	4.424
850.0	4.320	34.931	267.0	4.254
900.0	4.250	34.930	268.3	4.180
950.0	4.139	34.921	271.6	4.065
1000.0	4.066	34.916	273.1	3.989
1050.0	4.006	34.913	274.1	3.925
1100.0	3.963	34.912	274.6	3.878
1150.0	3.922	34.911	274.5	3.833
1200.0	3.895	34.913	274.4	3.802
1250.0	3.869	34.915	273.8	3.773
1300.0	3.857	34.919	272.2	3.756
1350.0	3.838	34.923	271.7	3.733
1400.0	3.801	34.923	271.7	3.692
1450.0	3.767	34.926	271.3	3.654
1500.0	3.711	34.926	271.5	3.595
1550.0	3.679	34.927	271.4	3.558
1600.0	3.649	34.930	271.7	3.524
1650.0	3.595	34.932	271.9	3.467
1700.0	3.556	34.934	272.4	3.423
1750.0	3.523	34.940	272.6	3.386
1800.0	3.454	34.937	273.0	3.313
1850.0	3.454	34.952	273.3	3.309
1900.0	3.349	34.950	273.4	3.201
1950.0	3.291	34.958	273.6	3.139
2000.0	3.221	34.959	273.3	3.065
2050.0	3.173	34.965	273.3	3.013
2100.0	3.109	34.968	273.6	2.945
2150.0	3.044	34.976	273.8	2.876
2200.0	2.944	34.979	274.4	2.774
2250.0	2.888	34.980	275.1	2.714
2300.0	2.850	34.981	275.6	2.671
2350.0	2.826	34.982	276.1	2.644
2400.0	2.815	34.982	275.9	2.627
2450.0	2.806	34.982	275.7	2.614
2481.0	2.807	34.982	276.0	2.613



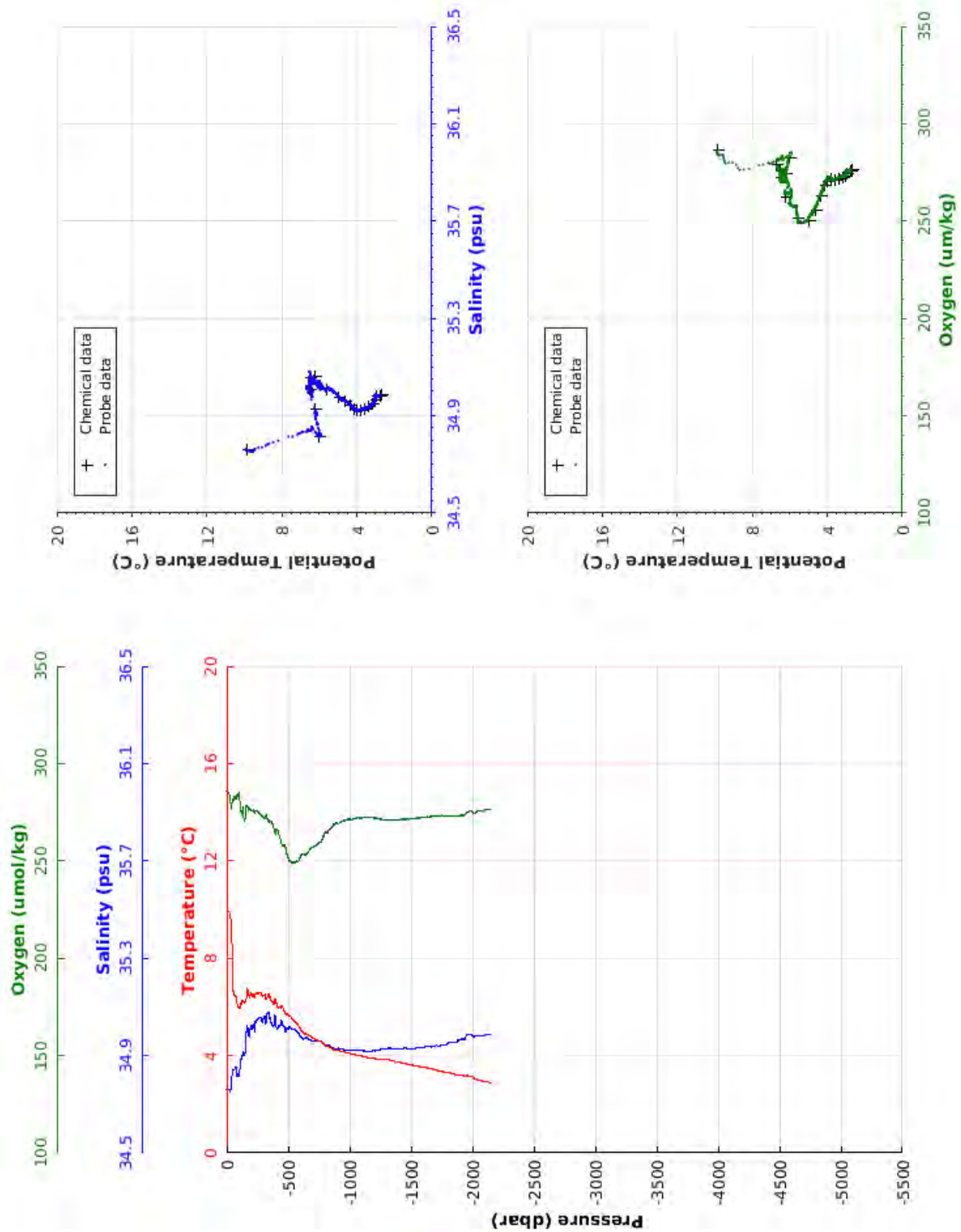
Station: 61

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| Cruise      : BOCATS 2016
|
| Station     : 62           Cast      : 1
|
| Date        : 09/07/2016   Ship       : B/O Sarmiento de Gamboa
|
| Depth       : 2139 m       Organism  : CSIC/IIM VIGO
|
| Position    : N 57 58.17
|               W 029 16.82
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.900	34.760	285.9	9.900
10.0	9.900	34.761	285.7	9.899
20.0	9.902	34.761	285.3	9.900
30.0	9.703	34.753	283.9	9.700
40.0	8.869	34.777	279.0	8.864
50.0	6.932	34.833	280.1	6.928
100.0	5.986	34.818	284.1	5.978
150.0	6.188	34.911	270.3	6.174
200.0	6.525	35.017	276.4	6.507
250.0	6.544	35.045	275.8	6.521
300.0	6.486	35.053	272.9	6.459
350.0	6.388	35.054	271.1	6.356
400.0	6.320	35.064	264.1	6.284
450.0	6.048	35.042	259.0	6.008
500.0	5.649	35.011	252.3	5.606
550.0	5.423	35.008	249.1	5.377
600.0	5.066	34.982	251.4	5.017
650.0	4.888	34.973	253.2	4.835
700.0	4.712	34.962	256.9	4.657
750.0	4.599	34.958	259.1	4.539
800.0	4.421	34.944	263.9	4.359
850.0	4.306	34.936	266.5	4.240
900.0	4.201	34.927	269.5	4.132
950.0	4.154	34.925	270.4	4.081
1000.0	4.091	34.924	271.3	4.014
1050.0	4.028	34.921	271.8	3.947
1100.0	3.985	34.921	271.8	3.901
1150.0	3.917	34.918	272.7	3.829
1200.0	3.876	34.920	272.0	3.783
1250.0	3.853	34.925	271.4	3.757
1300.0	3.828	34.929	271.1	3.728
1350.0	3.775	34.929	271.1	3.671
1400.0	3.729	34.930	271.3	3.621
1450.0	3.684	34.932	271.2	3.572
1500.0	3.614	34.928	271.5	3.498
1550.0	3.568	34.931	271.8	3.448
1600.0	3.524	34.935	272.2	3.401
1650.0	3.469	34.936	272.5	3.342
1700.0	3.418	34.938	272.9	3.287
1750.0	3.339	34.941	273.3	3.205
1800.0	3.315	34.950	273.2	3.176
1850.0	3.236	34.955	273.1	3.094
1900.0	3.202	34.963	273.5	3.056
1950.0	3.193	34.981	274.1	3.042
2000.0	3.128	34.985	275.7	2.974
2050.0	2.992	34.983	275.7	2.835
2100.0	2.928	34.984	276.1	2.768
2150.0	2.869	34.984	276.4	2.705
2161.0	2.869	34.984	276.6	2.703

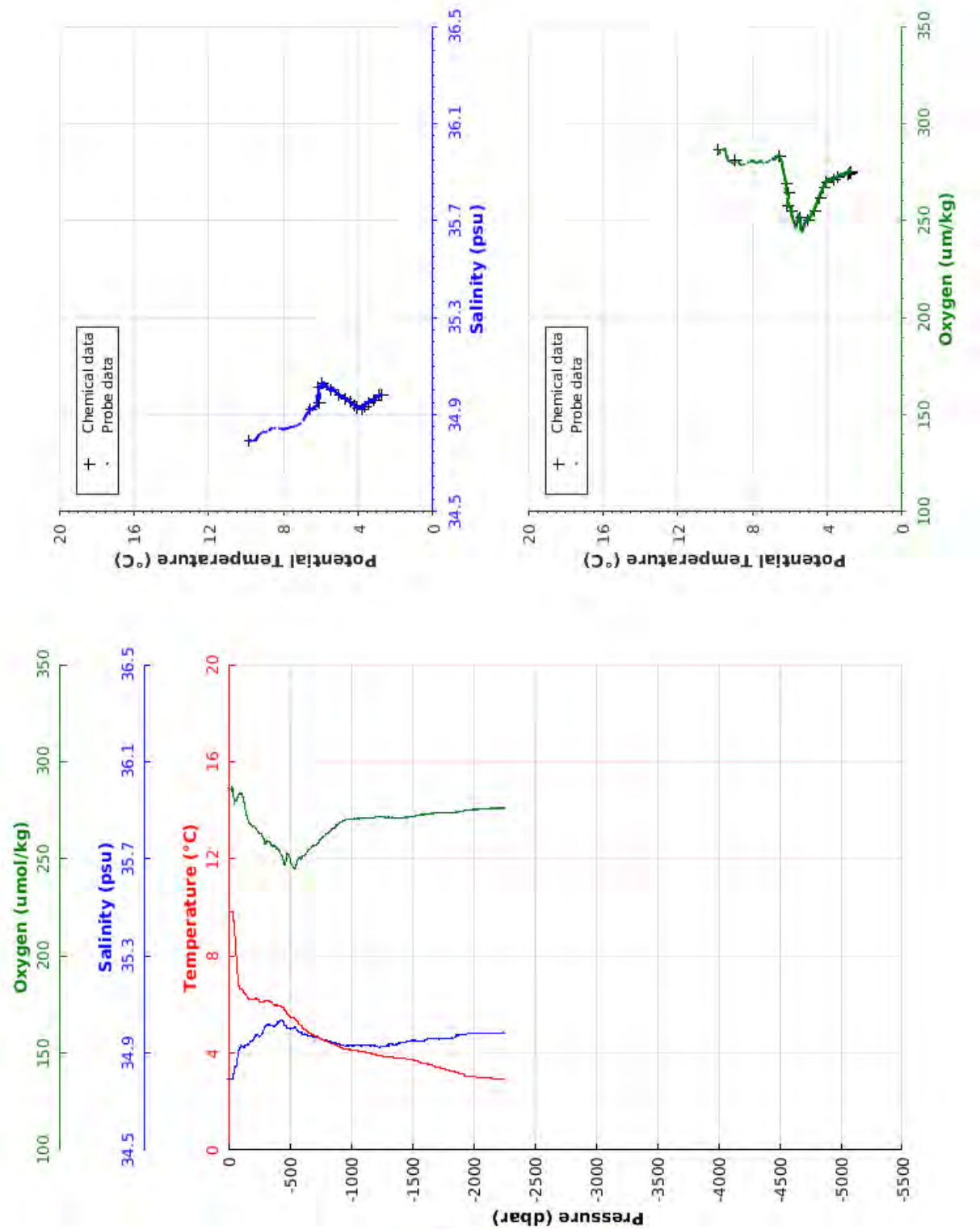


Station: 62



Cruise	: BOCATS 2016		
Station	: 63	Cast	: 1
Date	: 09/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2236 m	Organism	: CSIC/IIM VIGO
Position	: N 58 12.61 W 029 43.80		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.830	34.794	286.2	9.830
10.0	9.830	34.795	286.1	9.829
20.0	9.820	34.795	285.8	9.817
30.0	9.806	34.795	285.3	9.803
40.0	9.456	34.800	286.1	9.451
50.0	9.215	34.824	280.4	9.210
100.0	6.632	34.921	283.6	6.623
150.0	6.327	34.934	273.5	6.314
200.0	6.204	34.951	267.1	6.187
250.0	6.138	34.970	263.6	6.116
300.0	6.173	35.009	258.0	6.147
350.0	6.081	35.015	258.0	6.051
400.0	5.998	35.027	254.9	5.963
450.0	5.863	35.031	250.3	5.823
500.0	5.522	35.002	251.8	5.480
550.0	5.389	35.007	245.0	5.343
600.0	5.095	34.984	249.9	5.045
650.0	4.882	34.974	253.7	4.830
700.0	4.733	34.966	256.5	4.677
750.0	4.585	34.959	259.7	4.526
800.0	4.485	34.953	262.6	4.422
850.0	4.371	34.945	265.2	4.305
900.0	4.257	34.937	267.9	4.187
950.0	4.167	34.930	269.9	4.093
1000.0	4.137	34.931	270.4	4.059
1050.0	4.104	34.931	270.5	4.023
1100.0	4.059	34.932	270.9	3.974
1150.0	4.001	34.931	271.1	3.912
1200.0	3.938	34.929	271.2	3.845
1250.0	3.875	34.926	271.5	3.778
1300.0	3.851	34.932	271.1	3.750
1350.0	3.816	34.935	271.2	3.711
1400.0	3.792	34.941	271.2	3.683
1450.0	3.758	34.944	271.4	3.645
1500.0	3.732	34.951	271.6	3.615
1550.0	3.638	34.949	272.4	3.518
1600.0	3.566	34.951	272.7	3.442
1650.0	3.513	34.959	273.2	3.385
1700.0	3.422	34.958	273.5	3.290
1750.0	3.374	34.961	273.8	3.238
1800.0	3.288	34.959	273.6	3.149
1850.0	3.221	34.965	273.7	3.079
1900.0	3.137	34.975	274.2	2.991
1950.0	3.048	34.979	275.0	2.899
2000.0	3.023	34.980	275.4	2.870
2050.0	2.985	34.982	275.8	2.828
2100.0	2.964	34.983	275.8	2.803
2150.0	2.957	34.983	276.0	2.791
2200.0	2.951	34.983	275.9	2.781
2250.0	2.945	34.984	276.0	2.770
2259.0	2.945	34.984	276.2	2.770

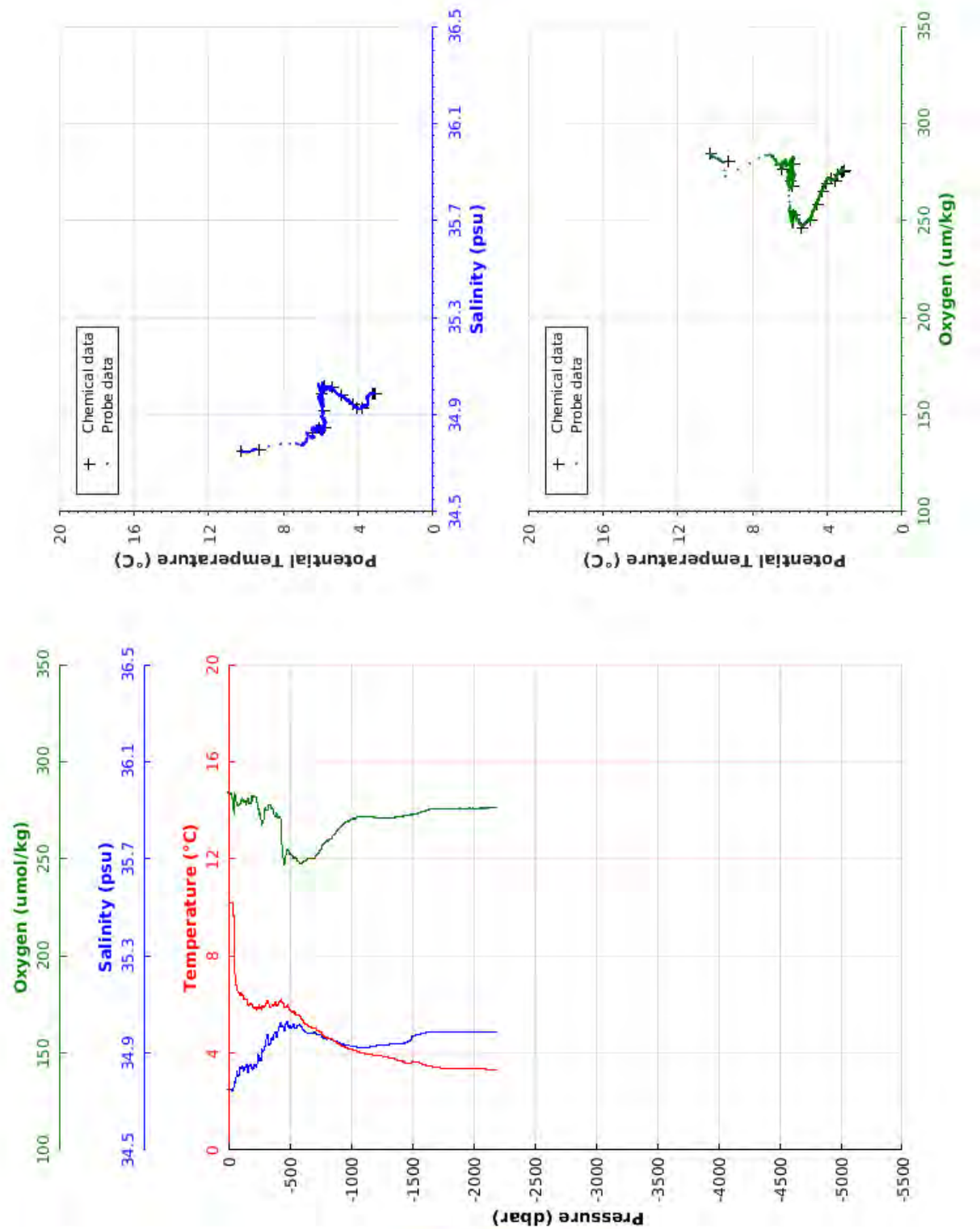


Station: 63



Cruise	: BOCATS 2016			
Station	: 64	Cast	: 1	
Date	: 09/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 2176 m	Organism	: CSIC/IIM VIGO	
Position	: N 58 24.64			
	W 030 6.25			

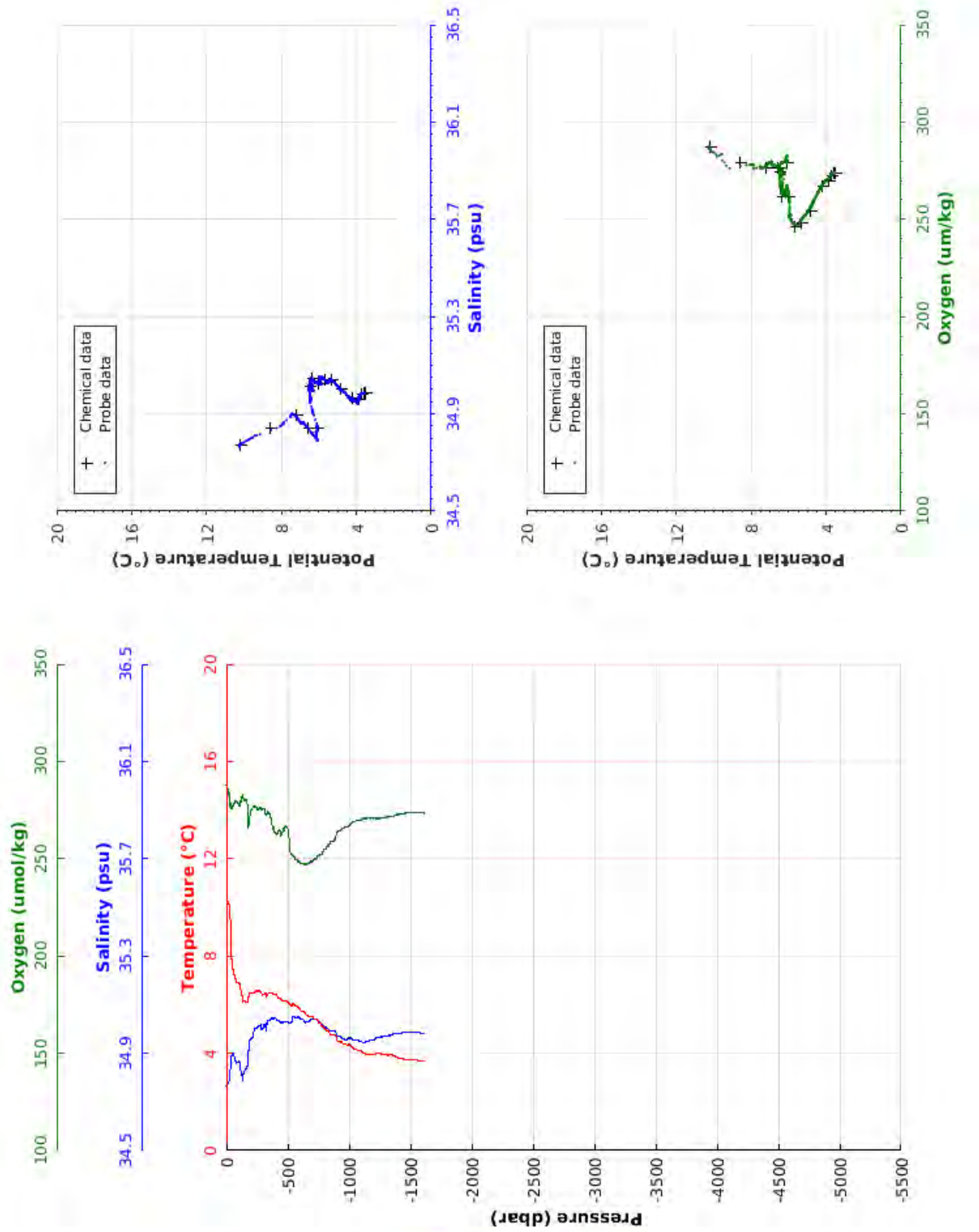
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.224	34.749	284.2	10.223
10.0	10.195	34.748	283.8	10.194
20.0	10.206	34.749	283.7	10.204
30.0	10.185	34.748	282.9	10.182
40.0	9.720	34.751	281.1	9.715
50.0	8.804	34.769	276.2	8.799
100.0	6.442	34.838	278.7	6.433
150.0	6.219	34.852	278.7	6.206
200.0	5.892	34.843	280.1	5.875
250.0	5.974	34.891	276.0	5.952
300.0	5.952	34.925	275.7	5.927
350.0	5.904	34.940	277.5	5.874
400.0	5.950	34.970	273.1	5.915
450.0	6.014	35.008	253.1	5.974
500.0	5.755	35.004	253.2	5.712
550.0	5.582	35.004	250.6	5.535
600.0	5.401	35.006	247.3	5.350
650.0	5.111	34.981	250.0	5.058
700.0	5.042	34.985	250.0	4.984
750.0	4.853	34.977	254.4	4.792
800.0	4.640	34.959	258.9	4.576
850.0	4.528	34.954	261.2	4.460
900.0	4.395	34.946	264.8	4.324
950.0	4.242	34.934	268.1	4.168
1000.0	4.157	34.928	270.0	4.079
1050.0	4.083	34.924	271.4	4.001
1100.0	3.996	34.923	271.9	3.911
1150.0	3.938	34.924	271.7	3.850
1200.0	3.915	34.928	271.4	3.822
1250.0	3.881	34.932	271.1	3.784
1300.0	3.820	34.934	271.1	3.720
1350.0	3.769	34.939	271.1	3.664
1400.0	3.690	34.938	271.6	3.582
1450.0	3.596	34.942	272.3	3.485
1500.0	3.653	34.966	272.9	3.537
1550.0	3.627	34.977	273.6	3.507
1600.0	3.515	34.983	274.7	3.391
1650.0	3.450	34.986	275.3	3.323
1700.0	3.410	34.987	275.6	3.279
1750.0	3.378	34.988	276.0	3.243
1800.0	3.375	34.988	276.0	3.235
1850.0	3.366	34.988	275.9	3.222
1900.0	3.354	34.988	275.8	3.205
1950.0	3.347	34.988	275.8	3.194
2000.0	3.343	34.988	276.0	3.185
2050.0	3.342	34.988	276.0	3.180
2100.0	3.333	34.988	276.2	3.166
2150.0	3.310	34.988	276.3	3.138
2198.0	3.293	34.988	276.6	3.117



Station: 64

Cruise	: BOCATS 2016		
Station	: 65	Cast	: 1
Date	: 09/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1612 m	Organism	: CSIC/IIM VIGO
Position	: N 58 32.95 W 030 21.99		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.235	34.767	287.7	10.235
10.0	10.223	34.774	286.2	10.222
20.0	10.175	34.776	285.4	10.173
30.0	9.565	34.803	283.6	9.561
40.0	7.909	34.859	278.2	7.905
50.0	7.477	34.895	276.6	7.472
100.0	6.899	34.863	278.8	6.889
150.0	6.169	34.827	280.7	6.156
200.0	6.466	34.957	273.9	6.448
250.0	6.562	35.004	276.5	6.539
300.0	6.411	35.002	275.3	6.384
350.0	6.467	35.035	273.6	6.435
400.0	6.420	35.047	263.5	6.383
450.0	6.191	35.026	261.7	6.150
500.0	6.099	35.030	266.2	6.055
550.0	6.020	35.050	251.7	5.971
600.0	5.794	35.045	248.0	5.742
650.0	5.591	35.028	247.2	5.535
700.0	5.510	35.042	248.6	5.450
750.0	5.288	35.033	251.3	5.225
800.0	5.012	35.010	254.6	4.946
850.0	4.783	34.992	258.4	4.713
900.0	4.600	34.979	262.0	4.527
950.0	4.392	34.960	265.5	4.317
1000.0	4.366	34.965	266.8	4.287
1050.0	4.180	34.954	269.3	4.098
1100.0	4.069	34.949	269.8	3.983
1150.0	3.971	34.949	270.8	3.882
1200.0	3.972	34.956	270.7	3.879
1250.0	3.984	34.967	270.9	3.887
1300.0	3.956	34.968	271.0	3.854
1350.0	3.933	34.977	271.7	3.827
1400.0	3.815	34.983	272.8	3.706
1450.0	3.752	34.984	273.4	3.639
1500.0	3.724	34.985	273.8	3.607
1550.0	3.714	34.986	273.7	3.593
1600.0	3.680	34.983	273.5	3.554
1625.0	3.674	34.983	273.8	3.546

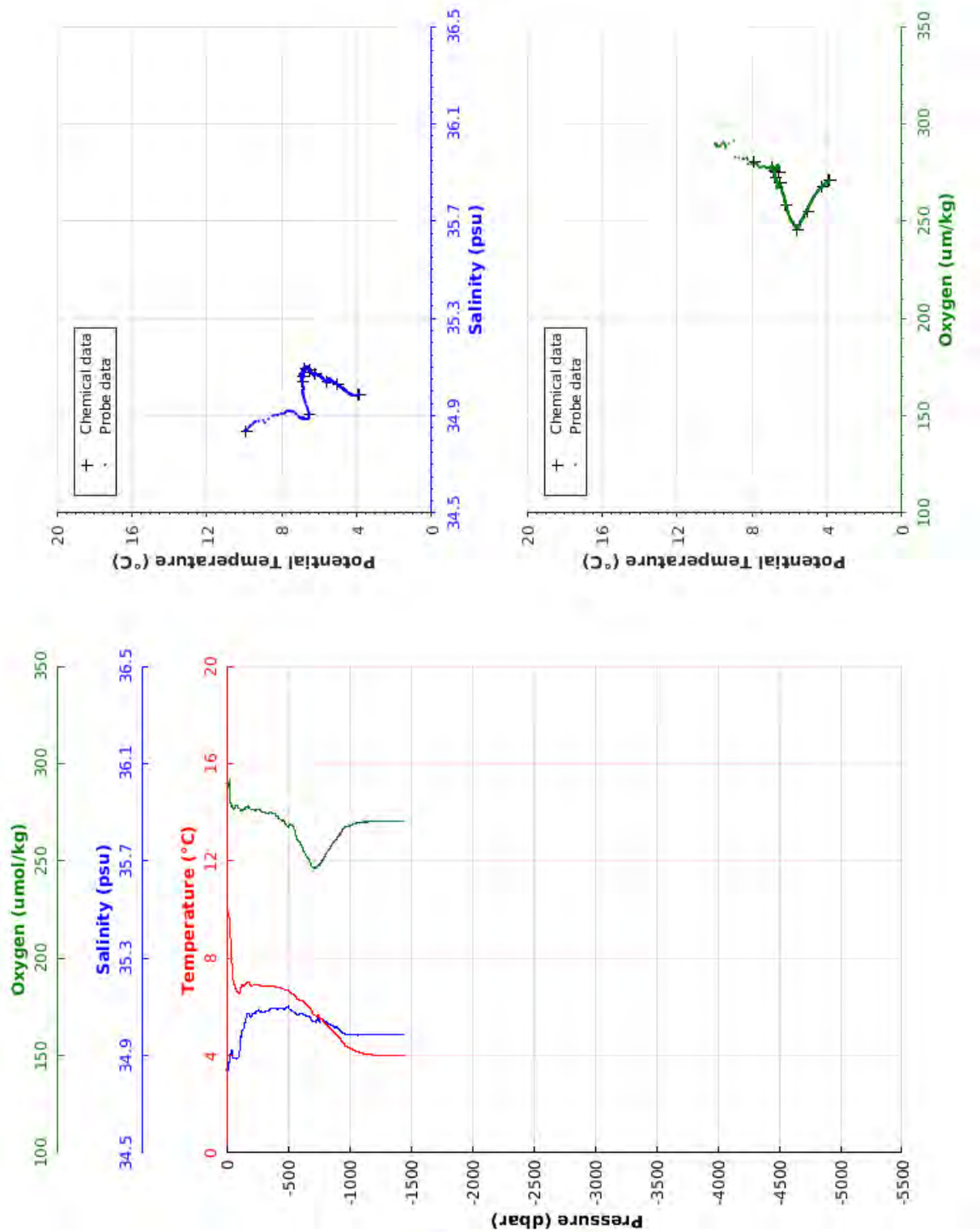


Station: 65



Cruise	: BOCATS 2016		
Station	: 66	Cast	: 1
Date	: 09/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1448 m	Organism	: CSIC/IIM VIGO
Position	: N 58 43.58 W 030 41.97		

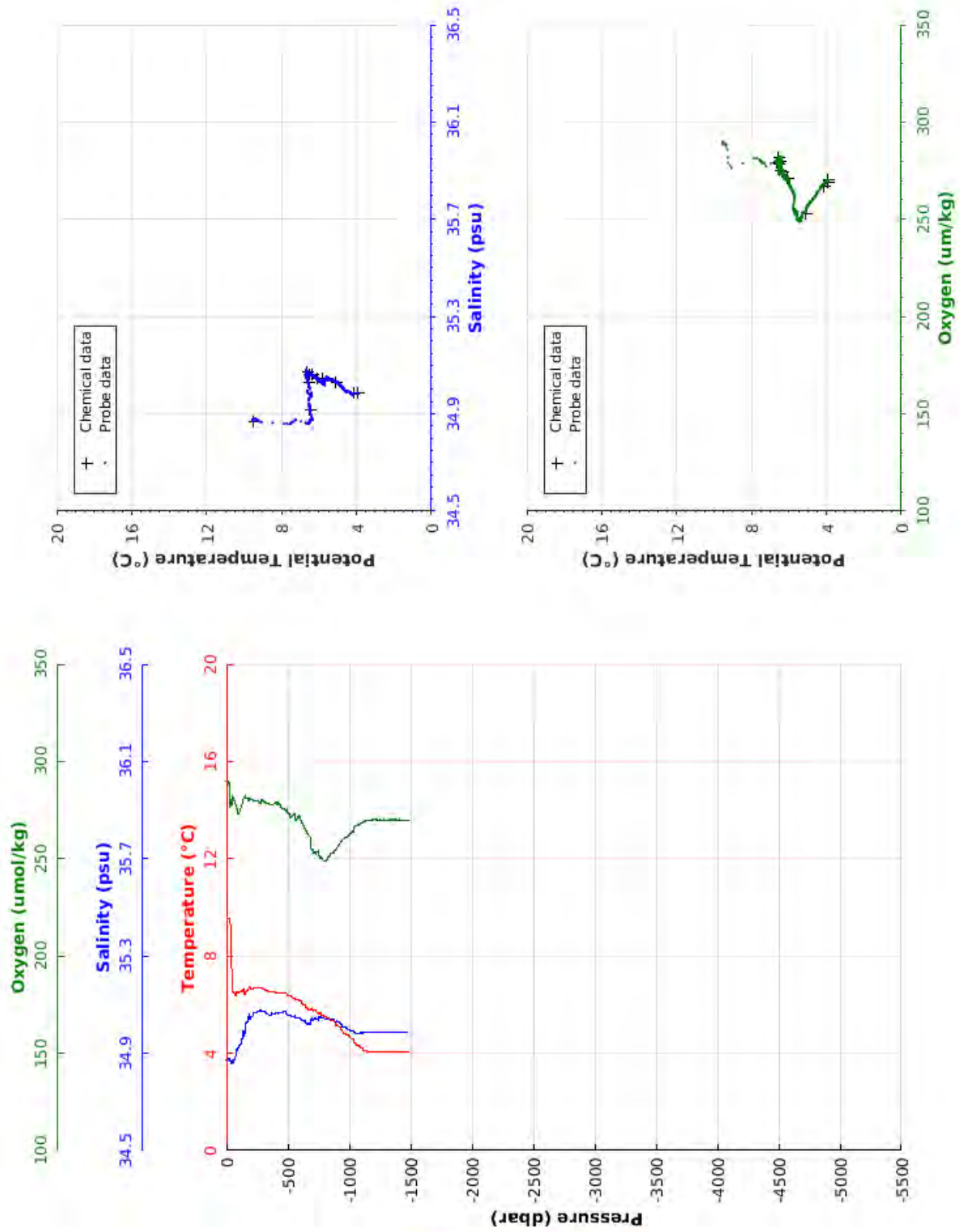
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.925	34.840	289.7	9.925
10.0	9.926	34.839	289.6	9.924
20.0	9.763	34.852	288.5	9.760
30.0	8.976	34.882	291.6	8.973
40.0	7.857	34.910	279.7	7.853
50.0	7.347	34.917	278.2	7.342
100.0	6.557	34.894	278.0	6.548
150.0	6.907	35.033	276.7	6.893
200.0	6.866	35.059	276.5	6.848
250.0	6.908	35.083	276.3	6.884
300.0	6.838	35.078	275.1	6.810
350.0	6.836	35.087	274.7	6.803
400.0	6.831	35.095	274.4	6.793
450.0	6.752	35.094	271.1	6.710
500.0	6.700	35.100	267.7	6.653
550.0	6.467	35.077	267.3	6.416
600.0	6.280	35.073	259.5	6.225
650.0	6.077	35.064	252.8	6.018
700.0	5.714	35.042	246.9	5.653
750.0	5.612	35.053	247.8	5.547
800.0	5.319	35.039	252.1	5.251
850.0	5.071	35.026	256.7	5.000
900.0	4.864	35.016	260.9	4.790
950.0	4.526	34.994	265.9	4.450
1000.0	4.324	34.986	267.8	4.245
1050.0	4.190	34.984	269.1	4.108
1100.0	4.115	34.984	269.7	4.029
1150.0	4.058	34.985	270.2	3.968
1200.0	4.030	34.985	270.4	3.936
1250.0	4.013	34.986	270.1	3.915
1300.0	4.007	34.986	270.5	3.905
1350.0	4.001	34.986	270.3	3.894
1400.0	4.001	34.987	270.3	3.890
1450.0	4.003	34.987	270.3	3.888
1458.0	4.004	34.986	270.5	3.888



Station: 66

Cruise	: BOCATS 2016		
Station	: 67	Cast	: 1
Date	: 10/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1481 m	Organism	: CSIC/IIM VIGO
Position	: N 58 50.77 W 031 16.18		

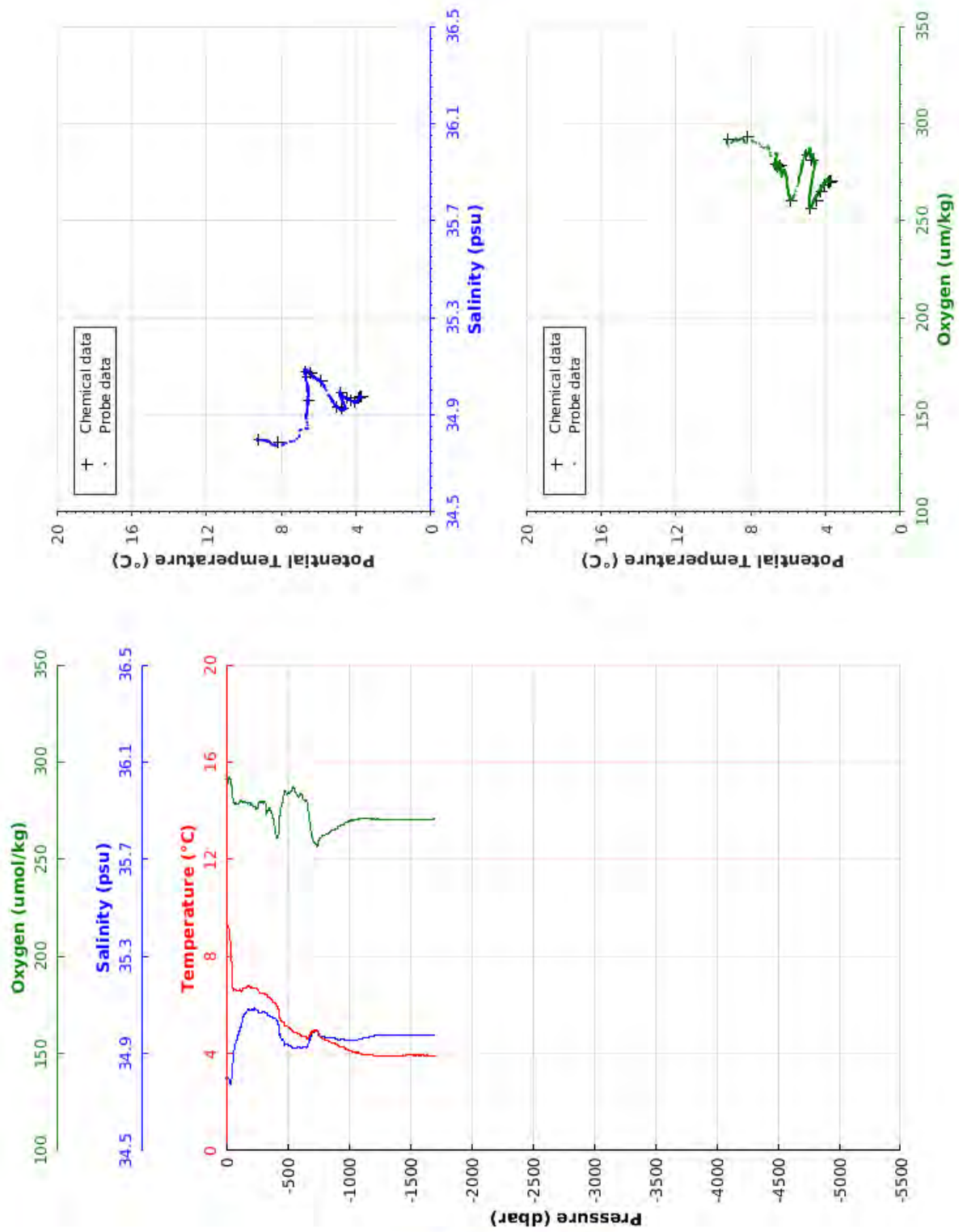
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.532	34.872	289.5	9.532
10.0	9.534	34.872	289.6	9.533
20.0	9.530	34.874	289.4	9.527
30.0	9.355	34.878	287.4	9.352
40.0	7.534	34.860	280.0	7.531
50.0	6.729	34.864	280.1	6.725
100.0	6.496	34.923	273.8	6.487
150.0	6.427	34.974	281.6	6.414
200.0	6.623	35.044	280.9	6.605
250.0	6.681	35.069	279.8	6.658
300.0	6.665	35.074	279.7	6.637
350.0	6.517	35.058	277.9	6.485
400.0	6.502	35.064	278.5	6.466
450.0	6.493	35.069	276.6	6.452
500.0	6.362	35.056	274.8	6.316
550.0	6.264	35.053	272.7	6.214
600.0	6.154	35.047	271.5	6.100
650.0	5.875	35.025	264.7	5.818
700.0	5.776	35.038	254.6	5.715
750.0	5.618	35.038	253.8	5.553
800.0	5.506	35.043	248.8	5.437
850.0	5.359	35.041	252.7	5.286
900.0	5.164	35.032	255.3	5.088
950.0	4.861	35.009	259.5	4.782
1000.0	4.697	34.996	261.6	4.615
1050.0	4.412	34.986	266.2	4.328
1100.0	4.239	34.984	268.1	4.152
1150.0	4.082	34.985	269.6	3.992
1200.0	4.042	34.985	269.8	3.948
1250.0	4.046	34.986	270.0	3.948
1300.0	4.047	34.985	270.0	3.944
1350.0	4.039	34.986	270.0	3.932
1400.0	4.039	34.986	269.8	3.927
1450.0	4.041	34.986	269.9	3.925
1491.0	4.045	34.985	270.1	3.925



Station: 67

Cruise	: BOCATS 2016		
Station	: 68	Cast	: 1
Date	: 10/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1693 m	Organism	: CSIC/IIM VIGO
Position	: N 58 54.62		
	W 031 54.72		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.270	34.798	291.3	9.270
10.0	9.270	34.798	291.1	9.269
20.0	9.246	34.798	289.3	9.244
30.0	8.705	34.792	291.4	8.702
40.0	8.220	34.773	290.4	8.216
50.0	7.023	34.836	286.7	7.018
100.0	6.596	34.976	278.5	6.587
150.0	6.705	35.058	279.5	6.691
200.0	6.710	35.076	278.9	6.692
250.0	6.632	35.079	276.1	6.609
300.0	6.476	35.071	279.6	6.449
350.0	6.309	35.058	274.8	6.278
400.0	6.072	35.045	266.9	6.037
450.0	5.342	34.963	276.3	5.304
500.0	5.105	34.938	283.4	5.065
550.0	4.891	34.922	287.1	4.848
600.0	4.782	34.925	282.2	4.735
650.0	4.681	34.926	280.0	4.630
700.0	4.901	34.979	263.5	4.844
750.0	4.853	34.986	257.1	4.792
800.0	4.585	34.968	262.2	4.522
850.0	4.499	34.965	263.4	4.431
900.0	4.393	34.961	265.4	4.322
950.0	4.276	34.958	267.8	4.202
1000.0	4.135	34.953	269.5	4.058
1050.0	4.038	34.955	270.4	3.957
1100.0	3.993	34.961	270.9	3.908
1150.0	3.945	34.966	271.1	3.856
1200.0	3.924	34.973	270.7	3.831
1250.0	3.920	34.974	270.5	3.823
1300.0	3.918	34.975	270.7	3.817
1350.0	3.920	34.976	270.4	3.814
1400.0	3.924	34.976	270.4	3.813
1450.0	3.924	34.976	270.5	3.809
1500.0	3.926	34.976	270.5	3.807
1550.0	3.925	34.976	270.3	3.801
1600.0	3.926	34.976	270.2	3.798
1650.0	3.922	34.976	270.5	3.789
1700.0	3.891	34.975	270.7	3.754
1709.0	3.866	34.974	271.1	3.729



Station: 68

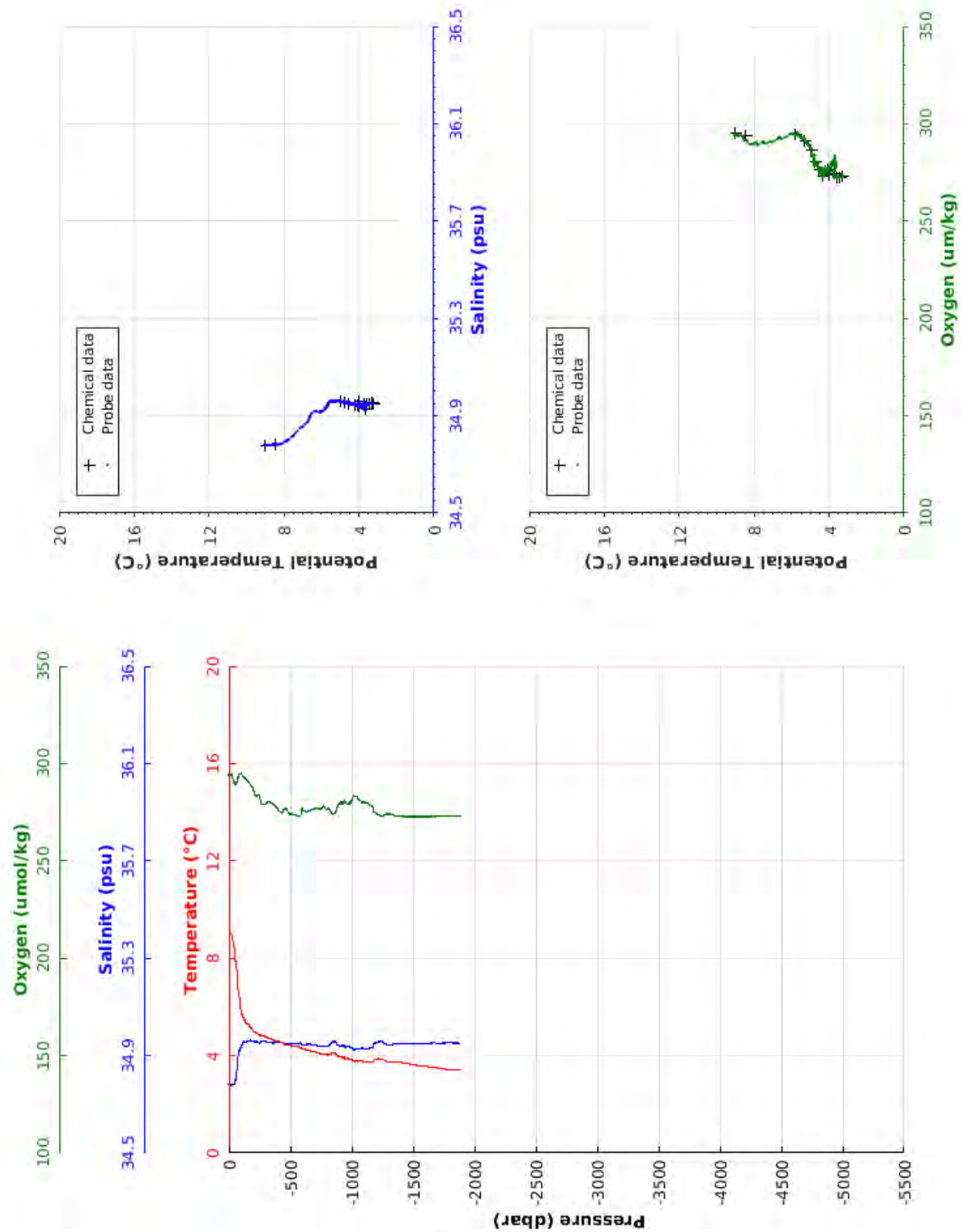


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| Cruise      : BOCATS 2016
|
| Station     : 69           Cast      : 1
|
| Date        : 10/07/2016   Ship       : B/O Sarmiento de Gamboa
|
| Depth       : 1880 m       Organism  : CSIC/IIM VIGO
|
| Position    : N 58 58.51
|              W 032 33.29
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.019	34.781	294.2	9.018
10.0	9.020	34.781	293.8	9.019
20.0	9.001	34.781	294.1	8.999
30.0	8.836	34.778	293.6	8.833
40.0	8.550	34.785	291.7	8.546
50.0	8.114	34.786	289.4	8.109
100.0	5.774	34.935	294.6	5.765
150.0	5.304	34.958	291.8	5.292
200.0	5.004	34.958	287.3	4.988
250.0	4.822	34.952	284.0	4.803
300.0	4.769	34.957	279.2	4.746
350.0	4.657	34.952	279.8	4.630
400.0	4.589	34.953	277.0	4.559
450.0	4.486	34.949	276.4	4.452
500.0	4.421	34.951	274.2	4.383
550.0	4.375	34.951	273.5	4.333
600.0	4.263	34.944	277.2	4.218
650.0	4.224	34.947	275.2	4.175
700.0	4.151	34.943	276.6	4.098
750.0	4.073	34.939	276.3	4.017
800.0	4.045	34.939	276.1	3.985
850.0	4.114	34.957	274.0	4.049
900.0	3.955	34.941	279.2	3.887
950.0	3.859	34.932	280.8	3.788
1000.0	3.831	34.933	280.3	3.756
1050.0	3.757	34.925	282.8	3.678
1100.0	3.753	34.929	280.3	3.670
1150.0	3.748	34.931	278.7	3.661
1200.0	3.842	34.950	274.9	3.750
1250.0	3.854	34.957	272.9	3.758
1300.0	3.756	34.944	274.1	3.656
1350.0	3.737	34.948	273.3	3.633
1400.0	3.715	34.948	273.0	3.607
1450.0	3.679	34.950	273.0	3.566
1500.0	3.648	34.950	272.6	3.531
1550.0	3.589	34.950	272.6	3.469
1600.0	3.557	34.952	272.8	3.433
1650.0	3.533	34.952	272.8	3.405
1700.0	3.488	34.951	273.0	3.356
1750.0	3.456	34.952	272.9	3.319
1800.0	3.421	34.952	273.1	3.280
1850.0	3.415	34.952	273.2	3.270
1895.0	3.406	34.952	273.4	3.257



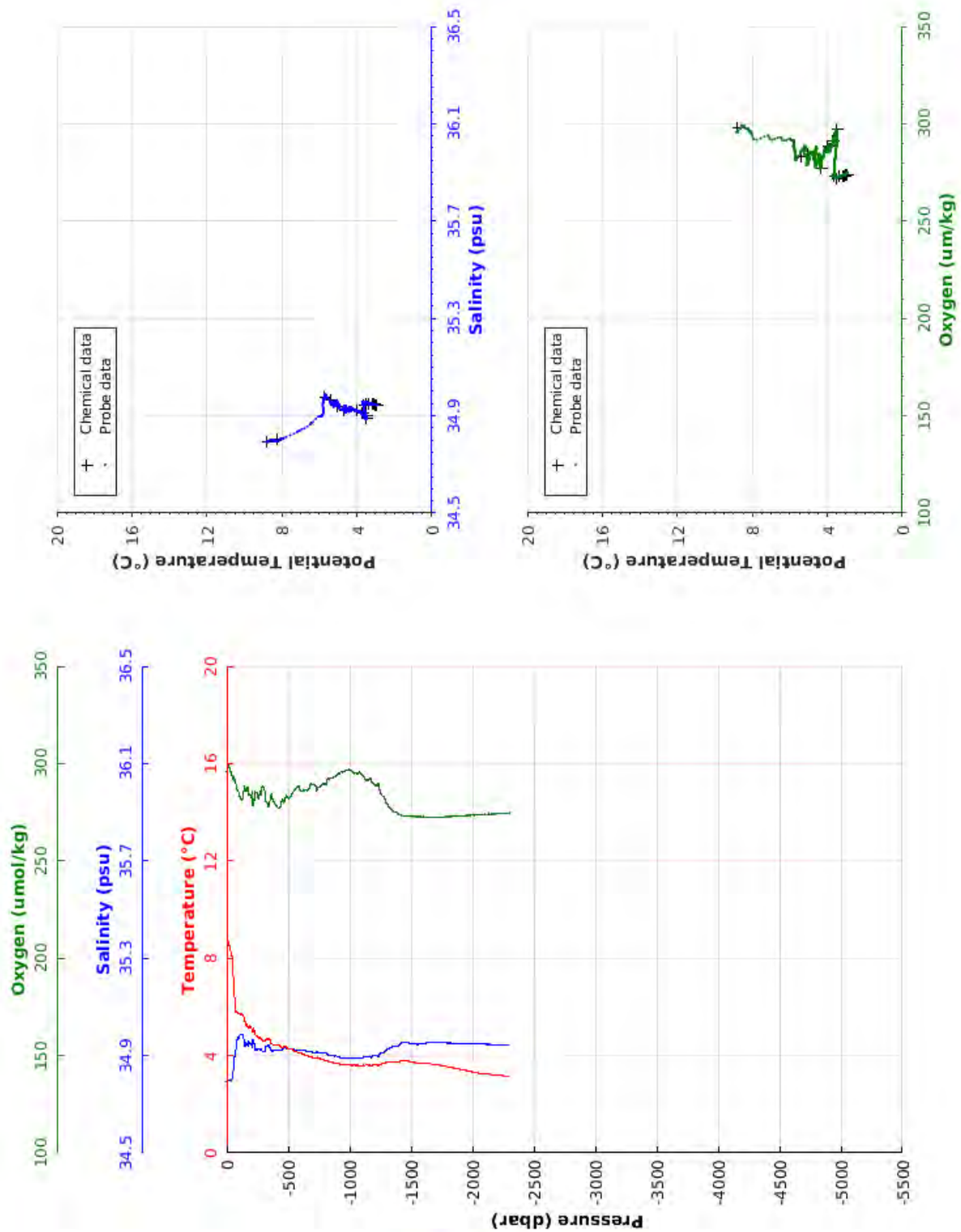
Station: 69

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| Cruise      : BOCATS 2016
| Station     : 70           Cast      : 1
| Date        : 10/07/2016   Ship       : B/O Sarmiento de Gamboa
| Depth       : 2283 m       Organism  : CSIC/IIM VIGO
| Position    : N 59 2.45
|              W 033 11.54
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.778	34.794	296.2	8.778
10.0	8.754	34.793	296.6	8.753
20.0	8.553	34.801	298.7	8.550
30.0	8.350	34.798	297.8	8.347
40.0	8.133	34.801	295.8	8.129
50.0	7.910	34.809	292.0	7.906
100.0	5.722	34.972	285.8	5.714
150.0	5.384	34.951	286.3	5.372
200.0	5.125	34.946	283.6	5.109
250.0	4.761	34.924	285.0	4.742
300.0	4.618	34.917	288.1	4.595
350.0	4.655	34.941	277.6	4.628
400.0	4.440	34.923	278.8	4.410
450.0	4.332	34.923	280.3	4.299
500.0	4.293	34.930	282.9	4.255
550.0	4.197	34.925	285.7	4.156
600.0	4.094	34.923	286.5	4.050
650.0	4.000	34.919	286.3	3.952
700.0	3.920	34.914	289.2	3.868
750.0	3.879	34.914	287.6	3.824
800.0	3.812	34.909	289.5	3.753
850.0	3.726	34.901	292.3	3.664
900.0	3.676	34.895	294.2	3.610
950.0	3.638	34.892	295.6	3.568
1000.0	3.606	34.889	296.9	3.533
1050.0	3.600	34.890	295.2	3.522
1100.0	3.586	34.890	294.4	3.505
1150.0	3.607	34.895	291.3	3.521
1200.0	3.620	34.900	289.4	3.530
1250.0	3.636	34.907	286.4	3.542
1300.0	3.717	34.924	280.2	3.618
1350.0	3.735	34.935	276.2	3.631
1400.0	3.746	34.941	274.3	3.638
1450.0	3.790	34.954	272.9	3.677
1500.0	3.731	34.950	272.8	3.614
1550.0	3.685	34.946	272.6	3.564
1600.0	3.663	34.949	272.6	3.537
1650.0	3.671	34.955	272.5	3.541
1700.0	3.627	34.954	272.5	3.493
1750.0	3.595	34.955	272.4	3.457
1800.0	3.535	34.952	272.7	3.393
1850.0	3.484	34.949	272.9	3.339
1900.0	3.443	34.949	273.0	3.293
1950.0	3.387	34.949	273.3	3.234
2000.0	3.329	34.948	273.5	3.172
2050.0	3.283	34.947	273.6	3.122
2100.0	3.236	34.946	274.1	3.071
2150.0	3.217	34.946	273.9	3.047
2200.0	3.194	34.946	274.1	3.019
2250.0	3.174	34.945	274.3	2.995
2300.0	3.138	34.944	274.7	2.955
2305.0	3.135	34.944	274.8	2.952



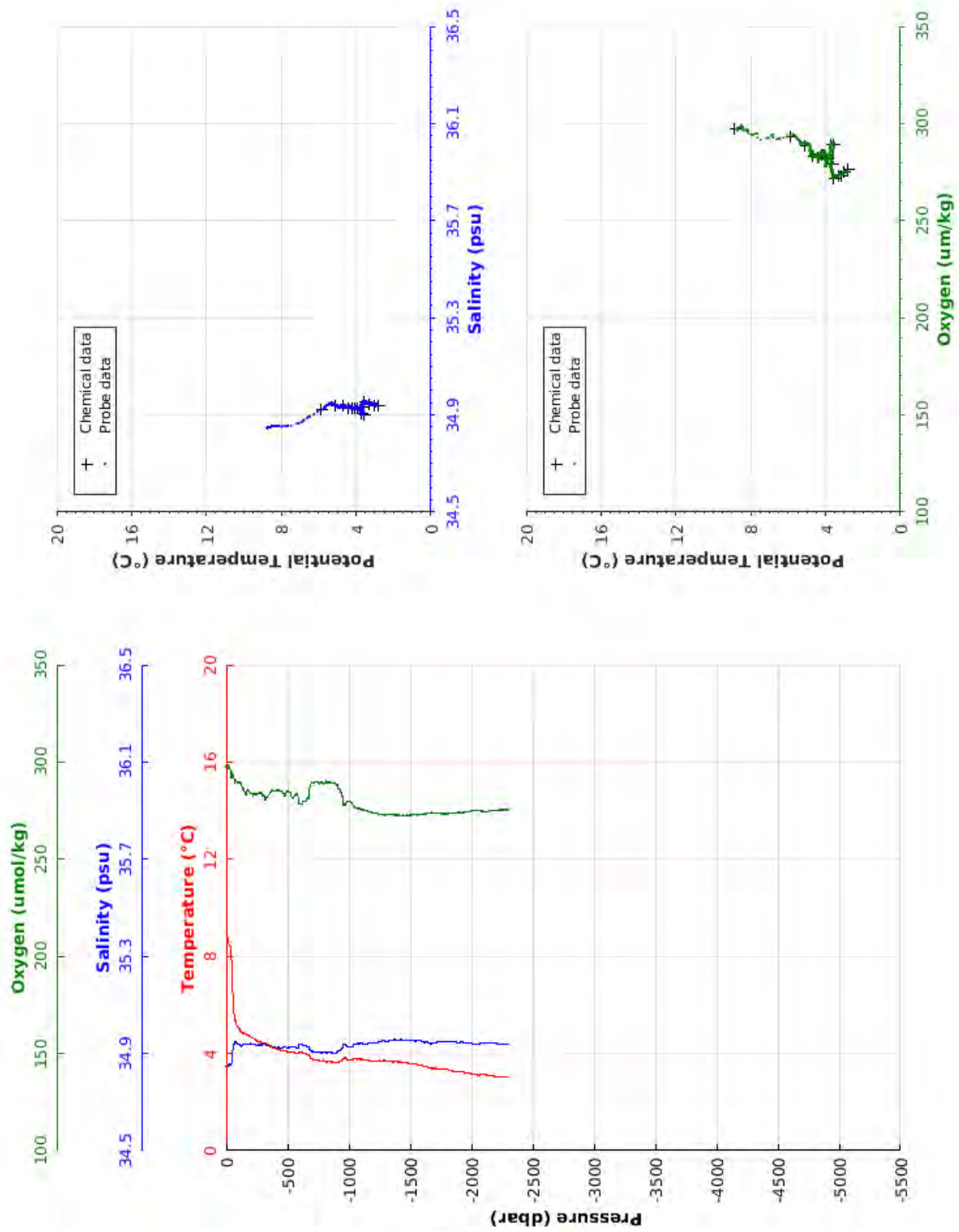
Station: 70

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| Cruise      : BOCATS 2016
| Station     : 71           Cast      : 1
| Date        : 10/07/2016   Ship       : B/O Sarmiento de Gamboa
| Depth       : 2288 m       Organism  : CSIC/IIM VIGO
| Position    : N 59 6.06
|              W 033 50.03
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.719	34.848	297.7	8.719
10.0	8.744	34.847	297.4	8.743
20.0	8.553	34.852	298.3	8.551
30.0	8.435	34.855	297.6	8.432
40.0	8.135	34.857	295.3	8.131
50.0	6.808	34.877	294.3	6.803
100.0	5.038	34.938	289.7	5.030
150.0	4.813	34.937	286.4	4.802
200.0	4.695	34.941	283.7	4.680
250.0	4.541	34.934	283.5	4.522
300.0	4.451	34.938	283.1	4.429
350.0	4.341	34.934	283.1	4.315
400.0	4.211	34.926	285.3	4.181
450.0	4.130	34.924	285.0	4.097
500.0	4.082	34.924	285.2	4.045
550.0	4.055	34.929	281.5	4.015
600.0	4.049	34.936	278.2	4.005
650.0	3.986	34.933	279.7	3.938
700.0	3.780	34.909	289.2	3.729
750.0	3.725	34.905	289.6	3.670
800.0	3.705	34.907	289.0	3.647
850.0	3.657	34.903	289.6	3.596
900.0	3.635	34.904	288.4	3.569
950.0	3.731	34.922	282.8	3.661
1000.0	3.726	34.927	279.9	3.651
1050.0	3.773	34.938	277.0	3.694
1100.0	3.757	34.942	275.7	3.674
1150.0	3.716	34.940	275.0	3.630
1200.0	3.698	34.943	273.8	3.607
1250.0	3.715	34.950	273.2	3.620
1300.0	3.689	34.951	272.9	3.590
1350.0	3.664	34.953	272.9	3.561
1400.0	3.656	34.956	272.7	3.549
1450.0	3.637	34.956	272.5	3.526
1500.0	3.584	34.954	272.5	3.468
1550.0	3.550	34.952	272.9	3.430
1600.0	3.507	34.950	272.8	3.384
1650.0	3.421	34.945	273.5	3.295
1700.0	3.387	34.945	273.7	3.256
1750.0	3.373	34.951	273.5	3.238
1800.0	3.337	34.951	273.3	3.198
1850.0	3.276	34.947	273.9	3.133
1900.0	3.253	34.946	274.0	3.106
1950.0	3.219	34.945	274.2	3.068
2000.0	3.157	34.942	274.8	3.002
2050.0	3.119	34.939	275.3	2.960
2100.0	3.128	34.944	274.7	2.965
2150.0	3.095	34.943	274.7	2.928
2200.0	3.053	34.941	275.1	2.882
2250.0	3.031	34.940	275.4	2.855
2300.0	3.026	34.940	275.4	2.845
2313.0	3.026	34.940	275.7	2.844

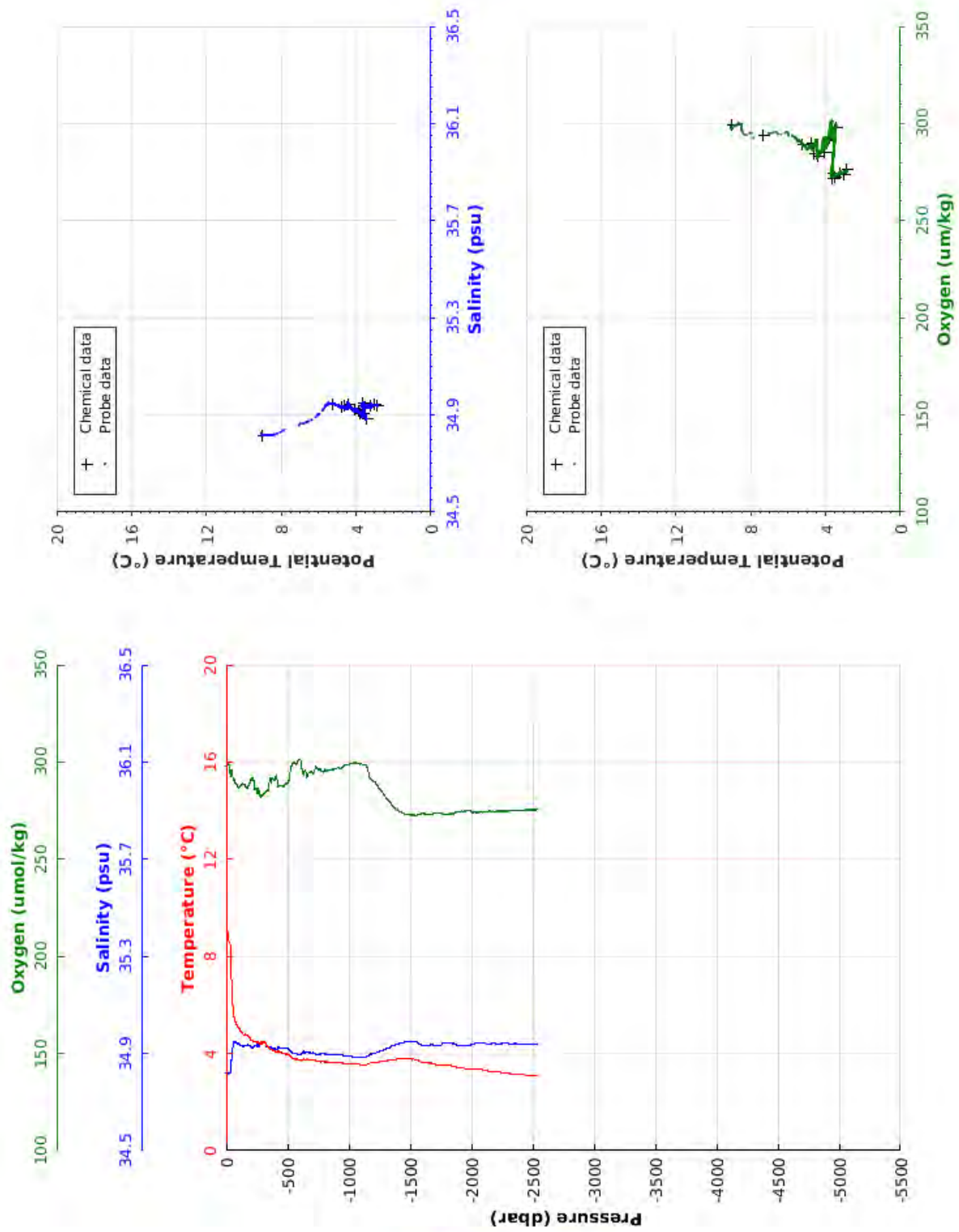


Station: 71



Cruise	: BOCATS 2016		
Station	: 72	Cast	: 1
Date	: 10/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2520 m	Organism	: CSIC/IIM VIGO
Position	: N 59 9.98 W 034 28.58		

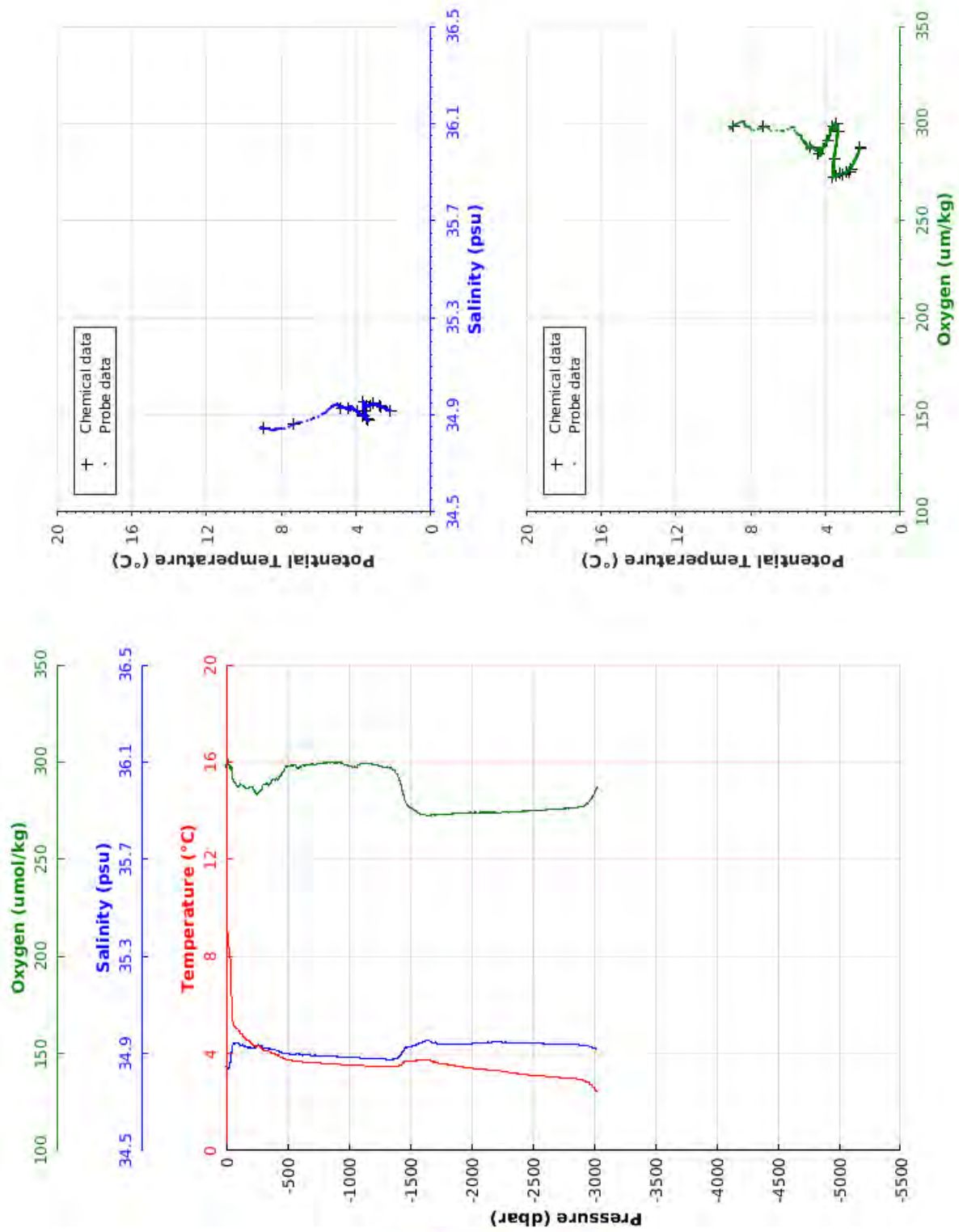
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.060	34.820	298.2	9.060
10.0	9.047	34.819	297.4	9.046
20.0	8.628	34.817	299.7	8.626
30.0	8.503	34.818	298.1	8.500
40.0	7.963	34.834	295.1	7.959
50.0	6.061	34.900	295.6	6.057
100.0	5.067	34.941	287.9	5.060
150.0	4.784	34.930	288.5	4.773
200.0	4.572	34.926	289.9	4.557
250.0	4.443	34.929	286.2	4.424
300.0	4.455	34.946	282.9	4.432
350.0	4.244	34.927	285.6	4.218
400.0	4.096	34.920	290.5	4.067
450.0	4.042	34.923	287.8	4.010
500.0	3.973	34.920	288.8	3.937
550.0	3.787	34.900	299.2	3.747
600.0	3.712	34.894	301.2	3.669
650.0	3.744	34.903	295.6	3.698
700.0	3.723	34.902	295.2	3.673
750.0	3.671	34.897	296.4	3.617
800.0	3.673	34.899	294.8	3.615
850.0	3.641	34.896	296.2	3.580
900.0	3.625	34.895	296.8	3.559
950.0	3.607	34.893	297.1	3.538
1000.0	3.583	34.889	298.5	3.510
1050.0	3.555	34.886	299.6	3.478
1100.0	3.543	34.884	299.5	3.462
1150.0	3.555	34.887	297.3	3.470
1200.0	3.623	34.900	290.2	3.533
1250.0	3.654	34.907	286.7	3.560
1300.0	3.699	34.918	282.4	3.600
1350.0	3.744	34.929	278.6	3.640
1400.0	3.771	34.939	275.3	3.662
1450.0	3.781	34.946	273.6	3.668
1500.0	3.771	34.948	272.9	3.654
1550.0	3.756	34.950	272.6	3.634
1600.0	3.627	34.932	273.7	3.503
1650.0	3.605	34.935	273.2	3.476
1700.0	3.553	34.934	273.5	3.421
1750.0	3.514	34.934	273.9	3.377
1800.0	3.523	34.942	273.2	3.381
1850.0	3.477	34.940	273.6	3.332
1900.0	3.421	34.934	274.4	3.271
1950.0	3.380	34.933	274.6	3.227
2000.0	3.378	34.939	274.4	3.220
2050.0	3.365	34.943	274.0	3.202
2100.0	3.329	34.943	274.2	3.162
2150.0	3.276	34.939	274.8	3.105
2200.0	3.250	34.941	274.7	3.075
2250.0	3.224	34.941	274.7	3.044
2300.0	3.200	34.941	274.7	3.017
2350.0	3.164	34.941	275.0	2.976
2400.0	3.143	34.940	275.1	2.950
2450.0	3.110	34.940	275.4	2.913
2500.0	3.093	34.939	275.5	2.892
2547.0	3.082	34.939	275.7	2.875



Station: 72

Cruise	: BOCATS 2016			
Station	: 73	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 2989 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 14.01			
	W 035 6.84			

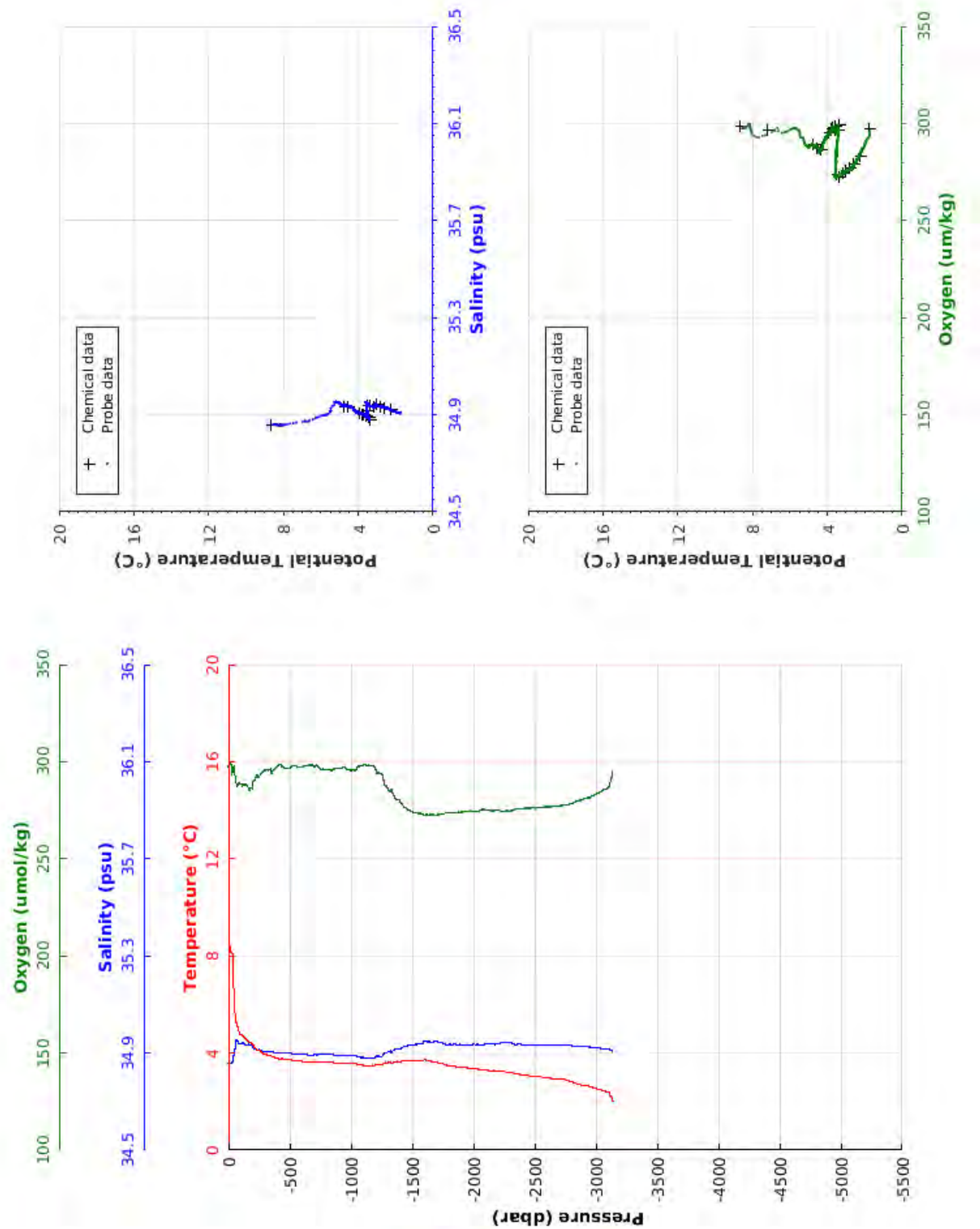
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.082	34.848	298.0	9.082	3028.0	2.417	34.918	287.5	2.176
10.0	8.990	34.845	298.1	8.989					
20.0	8.394	34.837	301.1	8.392					
30.0	8.057	34.846	298.1	8.054					
40.0	6.922	34.869	296.2	6.918					
50.0	5.567	34.916	295.2	5.563					
100.0	4.942	34.938	287.9	4.934					
150.0	4.629	34.930	287.0	4.617					
200.0	4.442	34.927	287.2	4.427					
250.0	4.312	34.931	283.8	4.294					
300.0	4.167	34.925	287.7	4.145					
350.0	4.090	34.921	288.1	4.064					
400.0	3.976	34.916	291.3	3.948					
450.0	3.848	34.905	293.2	3.816					
500.0	3.749	34.899	297.6	3.714					
550.0	3.700	34.897	298.3	3.661					
600.0	3.689	34.898	297.0	3.646					
650.0	3.646	34.894	298.0	3.599					
700.0	3.620	34.892	298.8	3.570					
750.0	3.604	34.891	299.3	3.551					
800.0	3.594	34.891	299.7	3.537					
850.0	3.576	34.888	299.6	3.515					
900.0	3.566	34.888	299.6	3.501					
950.0	3.542	34.885	299.5	3.473					
1000.0	3.542	34.886	298.1	3.469					
1050.0	3.538	34.886	297.5	3.461					
1100.0	3.503	34.881	299.2	3.422					
1150.0	3.485	34.879	299.0	3.400					
1200.0	3.480	34.878	298.8	3.391					
1250.0	3.472	34.878	298.2	3.380					
1300.0	3.463	34.877	297.1	3.366					
1350.0	3.451	34.876	297.0	3.350					
1400.0	3.481	34.881	293.6	3.375					
1450.0	3.633	34.911	283.5	3.522					
1500.0	3.704	34.929	277.0	3.587					
1550.0	3.709	34.935	274.7	3.588					
1600.0	3.736	34.946	273.1	3.610					
1650.0	3.739	34.954	272.5	3.608					
1700.0	3.652	34.944	273.0	3.518					
1750.0	3.597	34.939	273.1	3.459					
1800.0	3.555	34.940	273.1	3.413					
1850.0	3.511	34.939	273.5	3.365					
1900.0	3.459	34.938	273.9	3.309					
1950.0	3.433	34.938	273.7	3.279					
2000.0	3.393	34.940	274.0	3.235					
2050.0	3.372	34.944	274.0	3.209					
2100.0	3.342	34.945	273.9	3.175					
2150.0	3.317	34.946	274.0	3.146					
2200.0	3.291	34.947	274.1	3.115					
2250.0	3.253	34.946	274.1	3.073					
2300.0	3.224	34.946	274.2	3.040					
2350.0	3.177	34.944	274.6	2.989					
2400.0	3.165	34.944	274.7	2.972					
2450.0	3.126	34.943	274.8	2.929					
2500.0	3.102	34.942	274.8	2.900					
2550.0	3.094	34.942	275.0	2.887					
2600.0	3.062	34.940	275.4	2.851					
2650.0	3.033	34.939	275.7	2.818					
2700.0	3.024	34.939	275.7	2.804					
2750.0	3.006	34.938	276.1	2.781					
2800.0	2.984	34.937	276.2	2.755					
2850.0	2.960	34.936	276.5	2.726					
2900.0	2.912	34.935	277.2	2.673					
2950.0	2.824	34.932	278.6	2.582					
3000.0	2.581	34.923	282.9	2.339					



Station: 73

Cruise	: BOCATS 2016			
Station	: 74	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3099 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 17.95 W 035 45.74			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.527	34.860	297.5	8.527	3050.0	2.460	34.919	285.0	2.216
10.0	8.413	34.859	298.4	8.412	3100.0	2.382	34.917	286.5	2.135
20.0	8.176	34.857	299.7	8.174	3141.0	1.988	34.907	296.1	1.745
30.0	8.115	34.858	297.4	8.112					
40.0	6.862	34.874	296.0	6.858					
50.0	5.796	34.899	297.6	5.792					
100.0	4.766	34.939	289.0	4.758					
150.0	4.528	34.935	287.8	4.517					
200.0	4.329	34.929	286.1	4.315					
250.0	4.117	34.916	292.1	4.099					
300.0	3.947	34.906	295.3	3.926					
350.0	3.880	34.906	296.0	3.855					
400.0	3.794	34.901	297.0	3.766					
450.0	3.752	34.901	297.7	3.720					
500.0	3.731	34.900	296.9	3.696					
550.0	3.675	34.896	298.0	3.637					
600.0	3.654	34.895	297.4	3.612					
650.0	3.616	34.891	298.1	3.570					
700.0	3.617	34.892	297.4	3.568					
750.0	3.618	34.894	296.9	3.564					
800.0	3.613	34.893	296.1	3.556					
850.0	3.609	34.894	295.5	3.548					
900.0	3.584	34.891	296.6	3.519					
950.0	3.571	34.889	297.2	3.502					
1000.0	3.566	34.890	295.7	3.493					
1050.0	3.531	34.885	296.3	3.454					
1100.0	3.498	34.881	298.0	3.417					
1150.0	3.487	34.880	298.1	3.403					
1200.0	3.489	34.881	297.2	3.401					
1250.0	3.512	34.886	293.7	3.419					
1300.0	3.600	34.903	286.9	3.502					
1350.0	3.622	34.910	283.1	3.519					
1400.0	3.642	34.916	280.2	3.535					
1450.0	3.684	34.927	276.5	3.572					
1500.0	3.689	34.934	274.1	3.572					
1550.0	3.682	34.937	273.7	3.561					
1600.0	3.726	34.951	272.5	3.600					
1650.0	3.663	34.945	272.6	3.533					
1700.0	3.637	34.948	272.4	3.503					
1750.0	3.564	34.943	272.8	3.427					
1800.0	3.485	34.935	273.7	3.344					
1850.0	3.461	34.937	273.6	3.316					
1900.0	3.414	34.935	274.1	3.264					
1950.0	3.392	34.935	274.2	3.238					
2000.0	3.353	34.935	274.5	3.195					
2050.0	3.323	34.935	274.8	3.161					
2100.0	3.293	34.936	275.0	3.127					
2150.0	3.274	34.939	274.7	3.103					
2200.0	3.242	34.938	274.8	3.067					
2250.0	3.231	34.941	274.4	3.052					
2300.0	3.197	34.941	274.7	3.013					
2350.0	3.127	34.934	275.8	2.939					
2400.0	3.103	34.935	275.7	2.911					
2450.0	3.065	34.934	276.0	2.869					
2500.0	3.042	34.935	276.2	2.841					
2550.0	3.017	34.933	276.5	2.812					
2600.0	2.989	34.933	276.9	2.779					
2650.0	2.947	34.932	277.2	2.733					
2700.0	2.924	34.933	277.3	2.705					
2750.0	2.903	34.933	277.4	2.680					
2800.0	2.827	34.930	278.4	2.601					
2850.0	2.726	34.928	279.9	2.497					
2900.0	2.659	34.926	280.6	2.426					
2950.0	2.621	34.924	281.7	2.383					
3000.0	2.540	34.922	283.2	2.299					

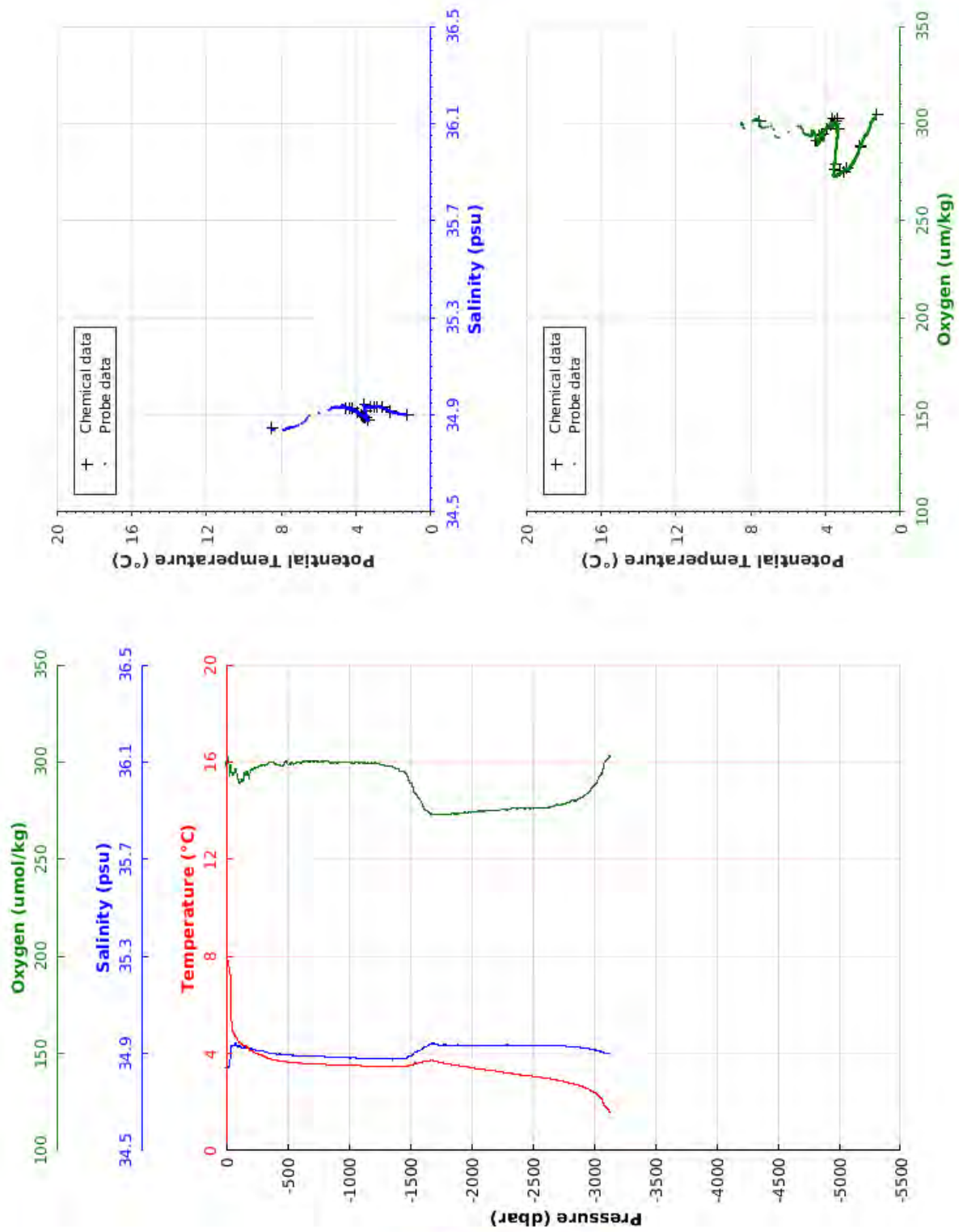


Station: 74



Cruise	: BOCATS 2016			
Station	: 75	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3096 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 21.80 W 036 23.88			

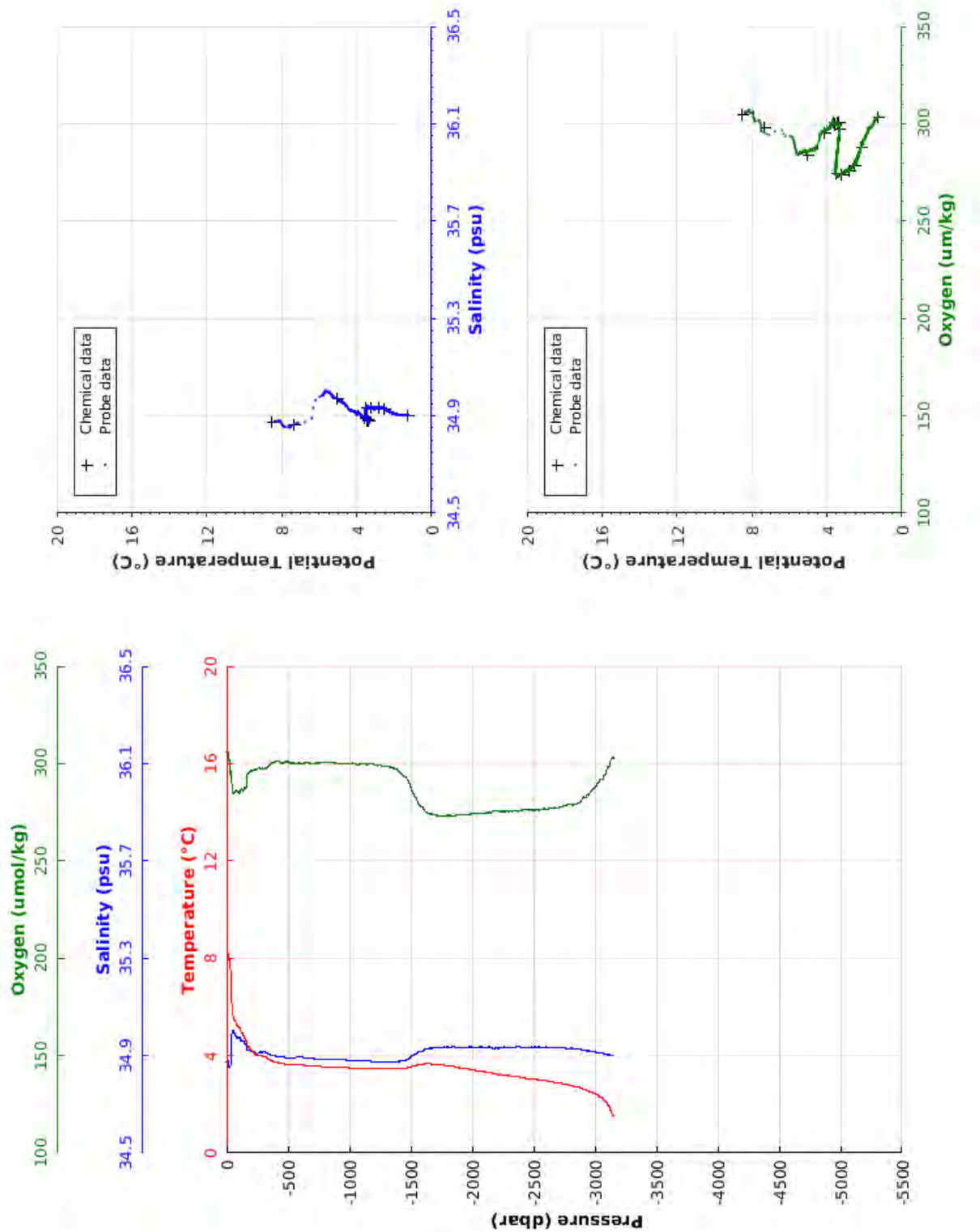
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.488	34.839	300.0	8.488	3050.0	2.187	34.908	293.0	1.949
10.0	7.853	34.838	301.4	7.852	3100.0	1.792	34.902	300.9	1.557
20.0	7.595	34.847	302.0	7.593	3136.0	1.551	34.902	303.4	1.319
30.0	7.376	34.851	297.8	7.373					
40.0	5.474	34.920	298.6	5.471					
50.0	5.028	34.932	294.4	5.024					
100.0	4.497	34.926	291.9	4.490					
150.0	4.327	34.928	293.2	4.316					
200.0	4.125	34.919	294.6	4.111					
250.0	4.001	34.914	297.1	3.983					
300.0	3.923	34.912	298.5	3.901					
350.0	3.789	34.902	299.5	3.765					
400.0	3.724	34.899	299.2	3.697					
450.0	3.694	34.897	298.2	3.662					
500.0	3.654	34.895	299.4	3.619					
550.0	3.629	34.893	298.8	3.590					
600.0	3.603	34.891	300.1	3.561					
650.0	3.584	34.890	300.0	3.539					
700.0	3.577	34.890	300.4	3.528					
750.0	3.571	34.889	300.3	3.518					
800.0	3.558	34.887	300.3	3.501					
850.0	3.545	34.886	300.0	3.484					
900.0	3.537	34.885	299.6	3.472					
950.0	3.526	34.884	300.0	3.457					
1000.0	3.511	34.882	299.9	3.439					
1050.0	3.510	34.882	299.3	3.434					
1100.0	3.494	34.880	299.9	3.413					
1150.0	3.486	34.879	299.5	3.402					
1200.0	3.480	34.878	299.4	3.392					
1250.0	3.479	34.878	298.9	3.386					
1300.0	3.474	34.877	298.3	3.377					
1350.0	3.471	34.877	297.7	3.370					
1400.0	3.470	34.877	296.6	3.364					
1450.0	3.467	34.877	295.2	3.357					
1500.0	3.530	34.890	290.0	3.415					
1550.0	3.594	34.905	283.5	3.474					
1600.0	3.650	34.919	278.9	3.525					
1650.0	3.680	34.931	274.5	3.550					
1700.0	3.695	34.941	272.9	3.560					
1750.0	3.620	34.935	273.2	3.481					
1800.0	3.576	34.934	273.2	3.434					
1850.0	3.529	34.933	273.4	3.382					
1900.0	3.499	34.935	273.5	3.348					
1950.0	3.453	34.934	274.1	3.299					
2000.0	3.423	34.933	274.1	3.265					
2050.0	3.370	34.932	274.5	3.208					
2100.0	3.350	34.932	274.8	3.183					
2150.0	3.313	34.934	275.1	3.142					
2200.0	3.275	34.933	275.1	3.099					
2250.0	3.229	34.933	275.7	3.050					
2300.0	3.205	34.935	275.5	3.021					
2350.0	3.159	34.933	276.4	2.971					
2400.0	3.120	34.932	276.3	2.927					
2450.0	3.093	34.934	276.1	2.896					
2500.0	3.056	34.934	276.2	2.855					
2550.0	3.023	34.934	276.4	2.817					
2600.0	2.987	34.934	276.7	2.777					
2650.0	2.952	34.934	276.8	2.738					
2700.0	2.898	34.931	277.9	2.680					
2750.0	2.851	34.931	278.4	2.629					
2800.0	2.790	34.929	279.0	2.564					
2850.0	2.726	34.928	280.0	2.497					
2900.0	2.647	34.924	281.9	2.414					
2950.0	2.541	34.920	284.2	2.305					
3000.0	2.412	34.915	287.7	2.174					



Station: 75

Cruise	: BOCATS 2016			
Station	: 76	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3115 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 25.65			
	W 037 2.33			

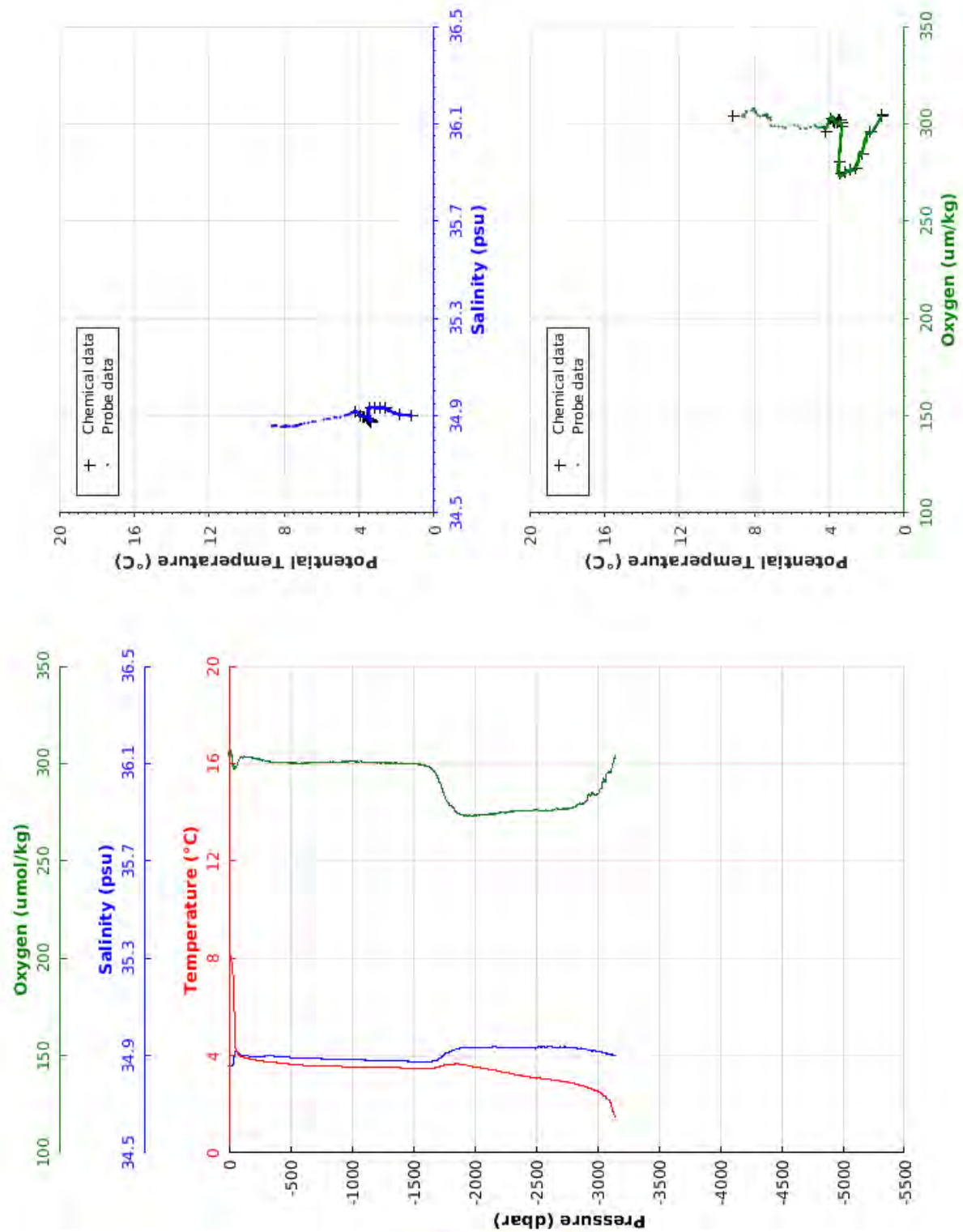
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.376	34.875	306.0	8.376	3050.0	2.281	34.910	291.9	2.041
10.0	8.203	34.878	306.8	8.202	3100.0	2.025	34.904	297.7	1.786
20.0	7.945	34.860	306.1	7.943	3150.0	1.555	34.902	303.1	1.321
30.0	7.568	34.852	300.4	7.566	3158.0	1.498	34.902	303.8	1.265
40.0	6.399	34.890	296.5	6.395					
50.0	5.713	34.995	288.6	5.709					
100.0	5.173	34.973	285.5	5.165					
150.0	4.709	34.952	287.2	4.698					
200.0	4.214	34.918	296.2	4.200					
250.0	3.993	34.906	297.2	3.975					
300.0	3.961	34.914	297.6	3.940					
350.0	3.841	34.907	298.8	3.817					
400.0	3.731	34.899	300.8	3.703					
450.0	3.678	34.895	300.3	3.647					
500.0	3.627	34.890	300.8	3.592					
550.0	3.611	34.890	300.2	3.573					
600.0	3.622	34.893	300.1	3.580					
650.0	3.585	34.890	300.5	3.540					
700.0	3.569	34.888	300.1	3.520					
750.0	3.553	34.886	300.2	3.500					
800.0	3.532	34.884	300.6	3.476					
850.0	3.526	34.883	300.6	3.466					
900.0	3.525	34.884	300.1	3.460					
950.0	3.521	34.883	300.0	3.452					
1000.0	3.488	34.879	300.1	3.416					
1050.0	3.483	34.878	300.1	3.407					
1100.0	3.476	34.877	299.9	3.396					
1150.0	3.472	34.877	299.4	3.388					
1200.0	3.464	34.876	299.7	3.376					
1250.0	3.462	34.876	299.1	3.370					
1300.0	3.457	34.875	298.7	3.360					
1350.0	3.457	34.875	297.8	3.356					
1400.0	3.458	34.876	296.7	3.353					
1450.0	3.476	34.880	293.3	3.367					
1500.0	3.528	34.891	288.7	3.413					
1550.0	3.598	34.906	282.6	3.478					
1600.0	3.643	34.919	277.7	3.518					
1650.0	3.663	34.930	274.3	3.533					
1700.0	3.641	34.932	273.4	3.507					
1750.0	3.626	34.935	273.2	3.487					
1800.0	3.594	34.937	273.1	3.452					
1850.0	3.555	34.937	273.2	3.408					
1900.0	3.494	34.934	273.6	3.344					
1950.0	3.452	34.933	273.9	3.298					
2000.0	3.423	34.936	274.1	3.264					
2050.0	3.369	34.935	274.3	3.206					
2100.0	3.333	34.934	274.7	3.166					
2150.0	3.310	34.935	274.6	3.139					
2200.0	3.229	34.930	275.5	3.055					
2250.0	3.210	34.933	275.4	3.031					
2300.0	3.179	34.935	275.4	2.996					
2350.0	3.144	34.934	275.7	2.956					
2400.0	3.099	34.934	275.9	2.907					
2450.0	3.049	34.932	276.6	2.853					
2500.0	3.032	34.934	276.1	2.831					
2550.0	2.995	34.934	276.2	2.790					
2600.0	2.962	34.935	276.5	2.753					
2650.0	2.925	34.934	276.8	2.712					
2700.0	2.882	34.934	277.3	2.664					
2750.0	2.831	34.931	278.3	2.610					
2800.0	2.775	34.929	279.0	2.550					
2850.0	2.717	34.929	279.3	2.487					
2900.0	2.630	34.922	282.0	2.397					
2950.0	2.551	34.919	283.9	2.315					
3000.0	2.439	34.915	287.7	2.201					



Station: 76

Cruise	: BOCATS 2016			
Station	: 77	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3109 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 29.53 W 037 40.69			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.448	34.859	306.1	8.448	3050.0	2.355	34.909	292.0	2.114
10.0	8.092	34.854	307.3	8.091	3100.0	2.140	34.907	295.6	1.898
20.0	7.923	34.858	306.2	7.921	3150.0	1.483	34.902	303.4	1.251
30.0	7.323	34.860	304.4	7.320	3153.0	1.489	34.902	303.8	1.257
40.0	6.487	34.876	298.4	6.484					
50.0	4.583	34.906	297.9	4.579					
100.0	3.964	34.903	303.1	3.957					
150.0	3.876	34.898	303.4	3.866					
200.0	3.831	34.897	303.2	3.817					
250.0	3.787	34.897	302.3	3.770					
300.0	3.755	34.898	301.3	3.734					
350.0	3.733	34.898	300.7	3.708					
400.0	3.699	34.896	300.7	3.672					
450.0	3.669	34.894	300.6	3.638					
500.0	3.643	34.892	300.4	3.608					
550.0	3.619	34.890	300.2	3.580					
600.0	3.600	34.889	300.1	3.558					
650.0	3.583	34.888	300.3	3.537					
700.0	3.572	34.887	300.4	3.523					
750.0	3.567	34.887	300.6	3.513					
800.0	3.561	34.887	300.7	3.504					
850.0	3.558	34.886	300.9	3.497					
900.0	3.552	34.886	300.6	3.487					
950.0	3.546	34.885	301.0	3.478					
1000.0	3.545	34.884	301.0	3.472					
1050.0	3.539	34.884	300.9	3.462					
1100.0	3.529	34.882	300.8	3.448					
1150.0	3.522	34.881	300.5	3.437					
1200.0	3.517	34.881	300.3	3.428					
1250.0	3.513	34.880	300.3	3.420					
1300.0	3.507	34.879	300.2	3.410					
1350.0	3.502	34.878	300.3	3.401					
1400.0	3.495	34.877	300.2	3.389					
1450.0	3.489	34.876	300.1	3.379					
1500.0	3.486	34.876	299.9	3.372					
1550.0	3.482	34.875	299.6	3.363					
1600.0	3.480	34.875	299.0	3.357					
1650.0	3.484	34.876	297.4	3.357					
1700.0	3.511	34.882	294.0	3.379					
1750.0	3.597	34.901	285.2	3.459					
1800.0	3.653	34.917	278.9	3.510					
1850.0	3.655	34.925	275.6	3.507					
1900.0	3.636	34.931	273.5	3.483					
1950.0	3.583	34.933	273.3	3.426					
2000.0	3.535	34.934	273.4	3.375					
2050.0	3.498	34.934	273.6	3.333					
2100.0	3.443	34.935	273.9	3.274					
2150.0	3.402	34.937	274.1	3.229					
2200.0	3.361	34.935	274.4	3.184					
2250.0	3.313	34.934	274.7	3.132					
2300.0	3.247	34.932	275.4	3.062					
2350.0	3.199	34.931	275.6	3.010					
2400.0	3.158	34.932	275.7	2.965					
2450.0	3.122	34.933	275.8	2.925					
2500.0	3.073	34.930	276.5	2.871					
2550.0	3.056	34.935	275.8	2.850					
2600.0	3.022	34.936	275.9	2.812					
2650.0	2.991	34.935	276.1	2.776					
2700.0	2.956	34.936	276.3	2.737					
2750.0	2.910	34.935	276.7	2.687					
2800.0	2.870	34.934	277.2	2.643					
2850.0	2.799	34.929	279.1	2.568					
2900.0	2.726	34.927	279.7	2.491					
2950.0	2.629	34.922	283.5	2.391					
3000.0	2.543	34.919	284.2	2.302					

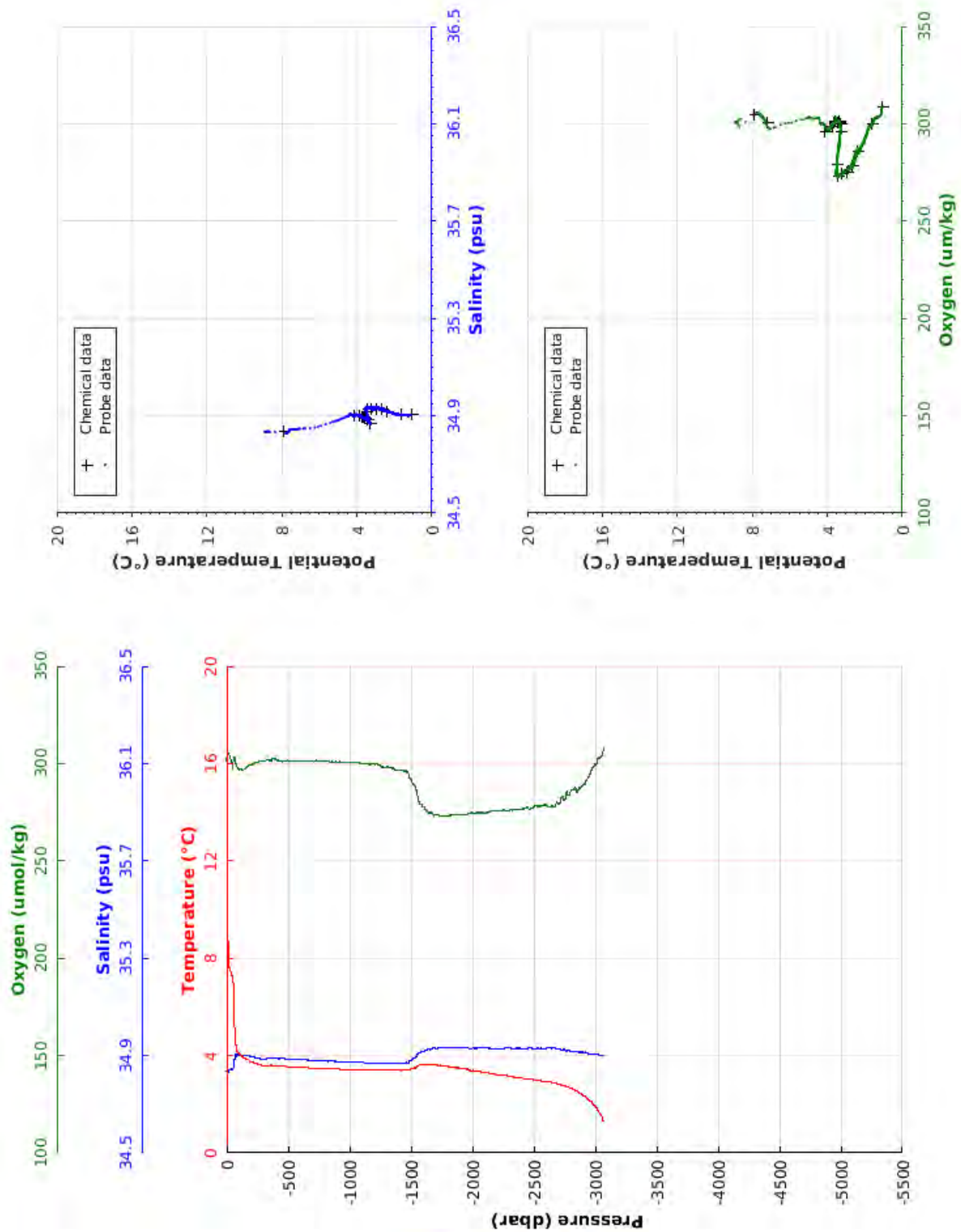


Station: 77



Cruise	: BOCATS 2016			
Station	: 78	Cast	: 1	
Date	: 11/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 3039 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 33.57			
	W 038 19.14			

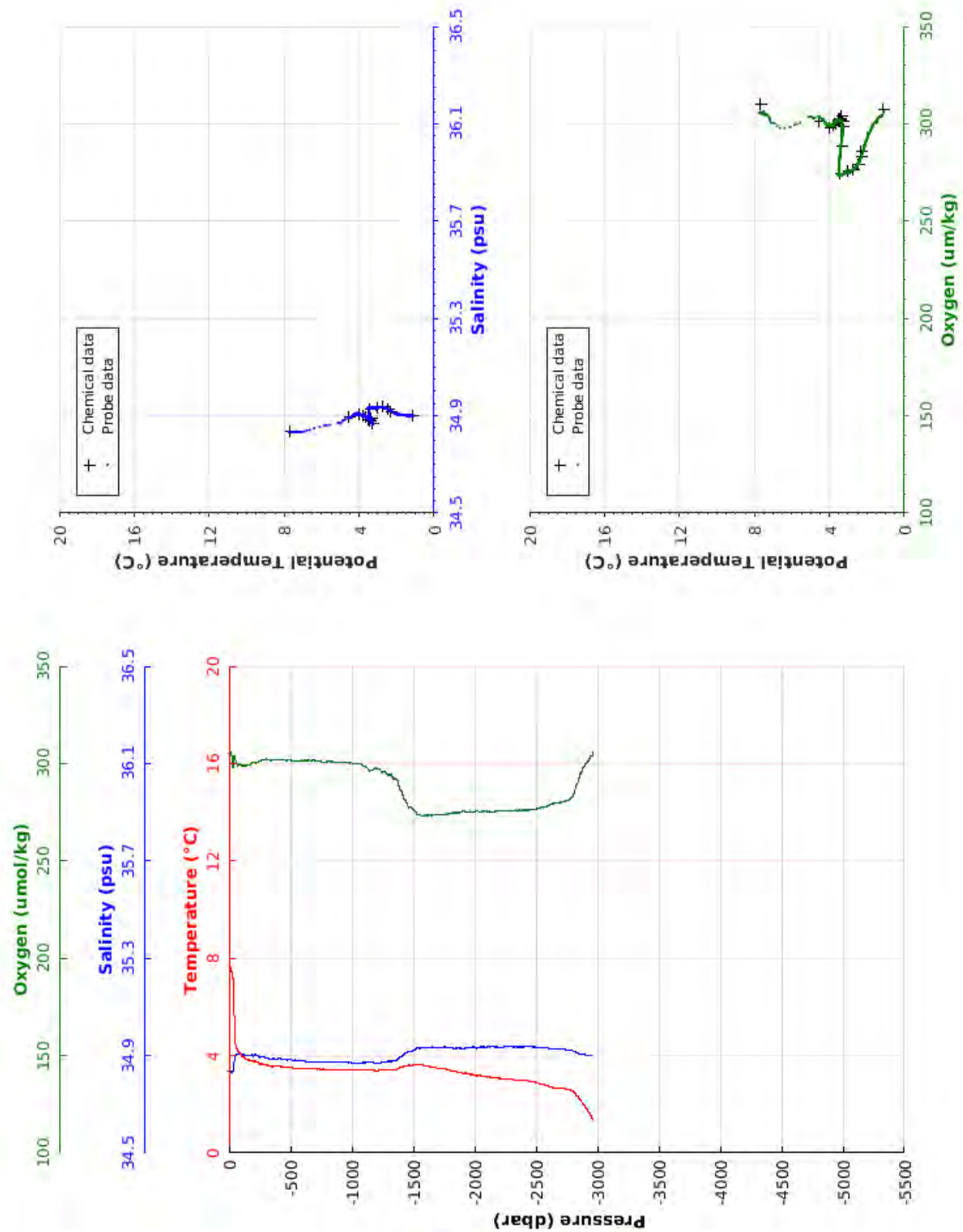
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.890	34.834	301.0	8.890	3050.0	1.532	34.901	303.4	1.309
10.0	8.748	34.836	299.5	8.747	3080.0	1.330	34.903	308.3	1.108
20.0	7.635	34.835	304.9	7.633					
30.0	7.505	34.842	303.7	7.502					
40.0	7.340	34.845	302.0	7.337					
50.0	7.234	34.844	299.1	7.229					
100.0	4.087	34.905	297.2	4.080					
150.0	3.887	34.901	297.4	3.876					
200.0	3.746	34.896	299.2	3.732					
250.0	3.663	34.890	300.4	3.646					
300.0	3.596	34.886	301.1	3.576					
350.0	3.594	34.889	301.8	3.571					
400.0	3.581	34.888	302.3	3.554					
450.0	3.566	34.889	301.1	3.535					
500.0	3.531	34.884	301.6	3.497					
550.0	3.526	34.885	301.3	3.488					
600.0	3.520	34.885	301.2	3.479					
650.0	3.498	34.882	301.6	3.453					
700.0	3.481	34.880	301.4	3.432					
750.0	3.468	34.878	301.3	3.416					
800.0	3.458	34.877	301.0	3.402					
850.0	3.453	34.877	300.8	3.393					
900.0	3.444	34.875	300.7	3.380					
950.0	3.435	34.874	300.8	3.367					
1000.0	3.426	34.873	300.8	3.354					
1050.0	3.420	34.872	300.4	3.344					
1100.0	3.417	34.871	300.0	3.337					
1150.0	3.413	34.871	299.9	3.329					
1200.0	3.406	34.870	299.7	3.318					
1250.0	3.403	34.869	299.2	3.311					
1300.0	3.404	34.869	298.1	3.308					
1350.0	3.395	34.868	297.6	3.294					
1400.0	3.396	34.869	296.7	3.291					
1450.0	3.393	34.869	296.3	3.284					
1500.0	3.460	34.881	291.9	3.346					
1550.0	3.538	34.897	285.8	3.419					
1600.0	3.614	34.916	277.9	3.490					
1650.0	3.629	34.925	274.8	3.499					
1700.0	3.615	34.928	273.9	3.482					
1750.0	3.592	34.933	273.2	3.454					
1800.0	3.559	34.933	273.3	3.417					
1850.0	3.513	34.932	273.5	3.367					
1900.0	3.468	34.932	273.7	3.318					
1950.0	3.441	34.933	273.9	3.287					
2000.0	3.382	34.930	274.7	3.224					
2050.0	3.347	34.931	274.7	3.184					
2100.0	3.322	34.933	274.7	3.155					
2150.0	3.257	34.928	275.5	3.087					
2200.0	3.223	34.929	275.6	3.048					
2250.0	3.191	34.930	276.0	3.012					
2300.0	3.165	34.932	275.8	2.982					
2350.0	3.114	34.929	276.3	2.926					
2400.0	3.077	34.929	276.4	2.885					
2450.0	3.034	34.928	277.7	2.838					
2500.0	3.002	34.929	277.5	2.802					
2550.0	2.967	34.929	278.0	2.763					
2600.0	2.923	34.929	279.0	2.714					
2650.0	2.895	34.930	278.6	2.682					
2700.0	2.832	34.930	279.5	2.616					
2750.0	2.761	34.925	281.4	2.541					
2800.0	2.654	34.919	285.0	2.431					
2850.0	2.553	34.919	284.9	2.327					
2900.0	2.403	34.915	288.4	2.175					
2950.0	2.188	34.907	293.3	1.960					
3000.0	1.908	34.904	299.5	1.681					



Station: 78

Cruise	: BOCATS 2016		
Station	: 79	Cast	: 1
Date	: 12/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2927 m	Organism	: CSIC/IIM VIGO
Position	: N 59 37.48 W 038 57.50		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.735	34.834	305.6	7.735
10.0	7.609	34.833	305.2	7.608
20.0	7.468	34.834	305.0	7.466
30.0	7.210	34.833	303.4	7.207
40.0	6.107	34.854	298.3	6.104
50.0	4.598	34.890	303.9	4.594
100.0	4.003	34.906	299.4	3.996
150.0	3.824	34.900	298.9	3.813
200.0	3.747	34.898	300.3	3.733
250.0	3.668	34.894	301.2	3.651
300.0	3.629	34.893	302.0	3.609
350.0	3.547	34.884	301.6	3.523
400.0	3.559	34.888	302.0	3.532
450.0	3.523	34.884	301.9	3.492
500.0	3.503	34.883	301.7	3.469
550.0	3.491	34.882	301.6	3.453
600.0	3.467	34.879	301.5	3.425
650.0	3.444	34.876	301.7	3.399
700.0	3.442	34.876	301.5	3.393
750.0	3.438	34.875	301.2	3.385
800.0	3.431	34.874	301.0	3.375
850.0	3.422	34.873	301.0	3.362
900.0	3.413	34.872	300.7	3.349
950.0	3.409	34.872	300.5	3.341
1000.0	3.404	34.871	300.3	3.332
1050.0	3.401	34.871	299.9	3.326
1100.0	3.406	34.871	298.6	3.326
1150.0	3.427	34.875	296.2	3.343
1200.0	3.380	34.868	297.8	3.292
1250.0	3.411	34.873	295.4	3.319
1300.0	3.426	34.877	293.8	3.330
1350.0	3.434	34.879	292.2	3.333
1400.0	3.513	34.896	286.5	3.407
1450.0	3.592	34.913	279.8	3.481
1500.0	3.608	34.921	276.7	3.492
1550.0	3.615	34.929	273.9	3.494
1600.0	3.570	34.931	273.5	3.446
1650.0	3.536	34.934	273.3	3.408
1700.0	3.493	34.934	273.6	3.361
1750.0	3.446	34.933	273.8	3.310
1800.0	3.412	34.934	274.1	3.272
1850.0	3.338	34.930	274.7	3.194
1900.0	3.273	34.929	275.3	3.126
1950.0	3.250	34.933	275.1	3.099
2000.0	3.203	34.933	275.0	3.047
2050.0	3.173	34.936	275.1	3.013
2100.0	3.118	34.934	275.7	2.955
2150.0	3.101	34.937	275.2	2.933
2200.0	3.066	34.935	275.6	2.894
2250.0	3.036	34.936	275.6	2.859
2300.0	3.017	34.936	275.7	2.836
2350.0	2.995	34.936	276.0	2.810
2400.0	2.979	34.936	276.1	2.789
2450.0	2.952	34.936	276.1	2.758
2500.0	2.891	34.935	276.4	2.693
2550.0	2.821	34.933	277.5	2.619
2600.0	2.740	34.931	278.2	2.536
2650.0	2.678	34.927	279.6	2.469
2700.0	2.657	34.926	280.2	2.444
2750.0	2.622	34.924	280.9	2.405
2800.0	2.530	34.919	283.2	2.309
2850.0	2.246	34.908	291.7	2.027
2900.0	1.881	34.903	299.2	1.664
2950.0	1.519	34.901	303.6	1.306
2964.0	1.311	34.900	306.4	1.101



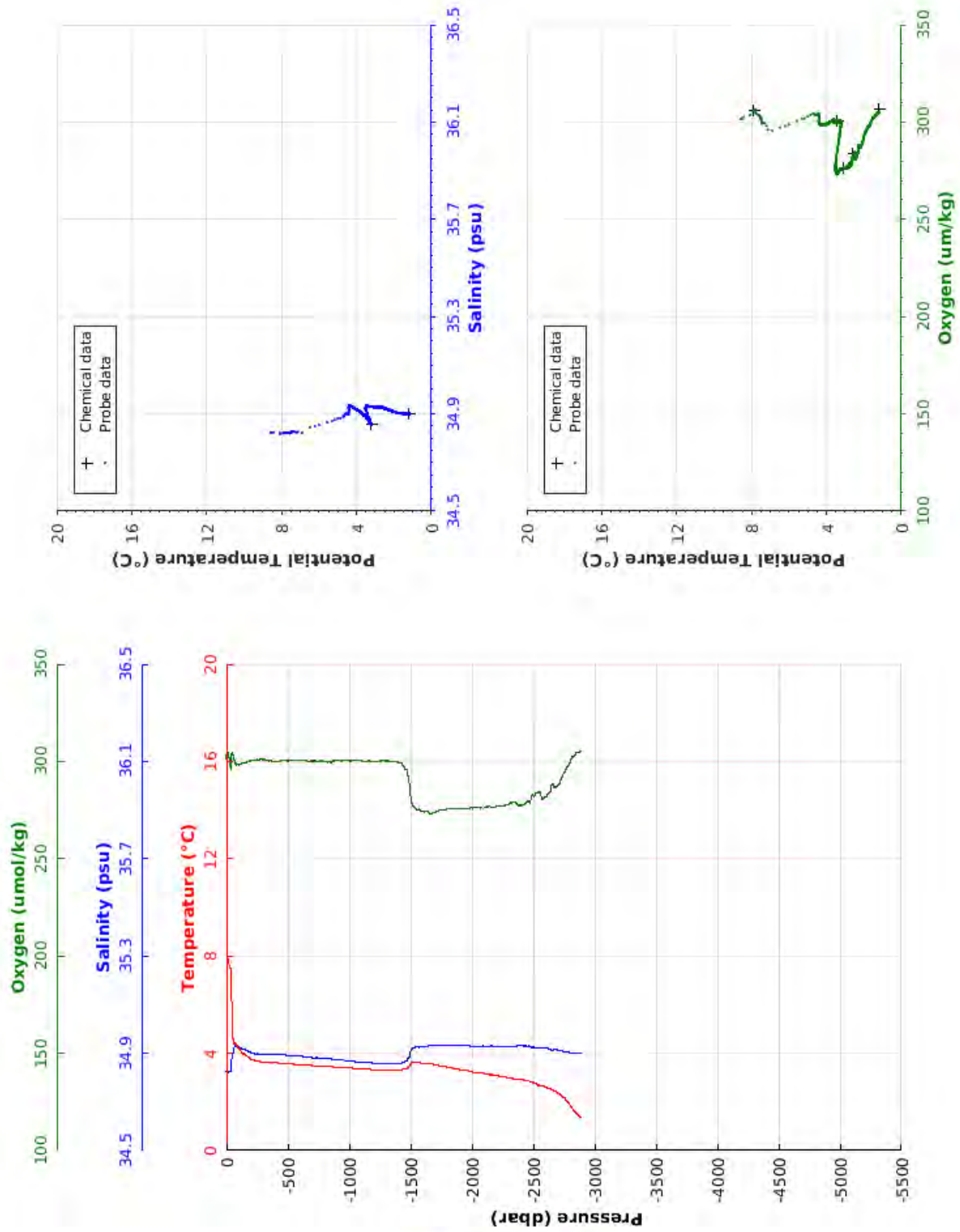
Station: 79

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| Cruise      : BOCATS 2016
|
| Station     : 80           Cast      : 1
|
| Date        : 12/07/2016   Ship      : B/O Sarmiento de Gamboa
|
| Depth       : 2859 m       Organism  : CSIC/IIM VIGO
|
| Position    : N 59 39.25
|              W 039 16.65
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.544	34.824	301.5	8.543
10.0	7.868	34.821	306.0	7.867
20.0	7.704	34.822	304.0	7.702
30.0	7.483	34.824	301.2	7.480
40.0	6.898	34.823	295.6	6.894
50.0	4.696	34.890	304.1	4.693
100.0	4.199	34.927	298.5	4.192
150.0	3.928	34.915	299.2	3.917
200.0	3.767	34.903	300.3	3.753
250.0	3.685	34.898	300.8	3.668
300.0	3.630	34.894	301.1	3.610
350.0	3.615	34.895	300.6	3.591
400.0	3.604	34.895	300.0	3.577
450.0	3.593	34.895	300.2	3.562
500.0	3.563	34.891	300.2	3.528
550.0	3.545	34.889	300.4	3.507
600.0	3.536	34.888	300.5	3.494
650.0	3.525	34.886	300.5	3.479
700.0	3.482	34.881	300.3	3.433
750.0	3.475	34.881	300.1	3.422
800.0	3.470	34.880	300.0	3.414
850.0	3.462	34.879	299.6	3.402
900.0	3.415	34.873	300.7	3.351
950.0	3.411	34.872	300.3	3.344
1000.0	3.398	34.870	300.4	3.326
1050.0	3.370	34.866	300.7	3.294
1100.0	3.356	34.864	300.4	3.277
1150.0	3.342	34.862	300.0	3.259
1200.0	3.327	34.860	300.1	3.239
1250.0	3.312	34.858	300.3	3.221
1300.0	3.317	34.858	300.3	3.222
1350.0	3.315	34.858	300.1	3.216
1400.0	3.317	34.858	299.6	3.213
1450.0	3.343	34.863	297.8	3.235
1500.0	3.533	34.901	285.5	3.418
1550.0	3.628	34.925	275.6	3.507
1600.0	3.594	34.927	274.6	3.469
1650.0	3.584	34.934	273.6	3.456
1700.0	3.520	34.931	273.8	3.388
1750.0	3.480	34.931	275.1	3.343
1800.0	3.426	34.930	275.5	3.286
1850.0	3.382	34.931	275.6	3.238
1900.0	3.336	34.931	275.7	3.187
1950.0	3.299	34.931	275.6	3.147
2000.0	3.239	34.928	276.4	3.083
2050.0	3.193	34.927	276.3	3.033
2100.0	3.172	34.929	276.1	3.008
2150.0	3.119	34.928	277.1	2.950
2200.0	3.082	34.929	276.7	2.910
2250.0	3.042	34.929	277.2	2.865
2300.0	2.986	34.928	278.0	2.805
2350.0	2.935	34.926	279.0	2.751
2400.0	2.918	34.932	277.4	2.730
2450.0	2.862	34.928	279.0	2.670
2500.0	2.786	34.924	282.9	2.590
2550.0	2.689	34.923	283.8	2.490
2600.0	2.621	34.923	281.6	2.419
2650.0	2.498	34.913	287.3	2.293
2700.0	2.364	34.913	287.5	2.156
2750.0	2.170	34.908	294.1	1.962
2800.0	1.866	34.903	298.9	1.659
2850.0	1.522	34.900	304.2	1.318
2897.0	1.389	34.901	305.4	1.183



Station: 80

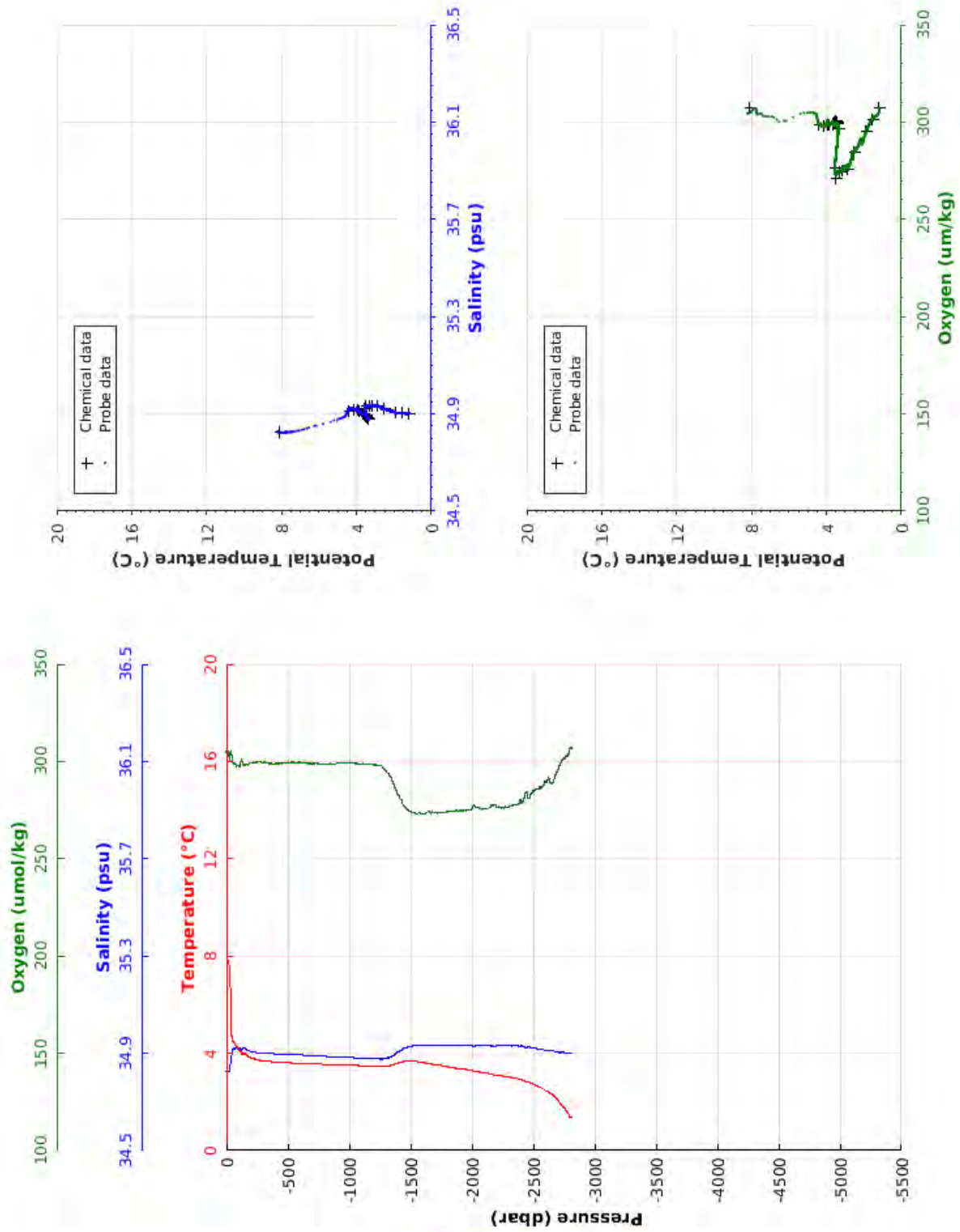


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| Cruise      : BOCATS 2016
| Station     : 81          Cast      : 1
| Date        : 12/07/2016   Ship      : B/O Sarmiento de Gamboa
| Depth       : 2794 m       Organism  : CSIC/IIM VIGO
| Position    : N 59 41.13
|              W 039 36.01
|
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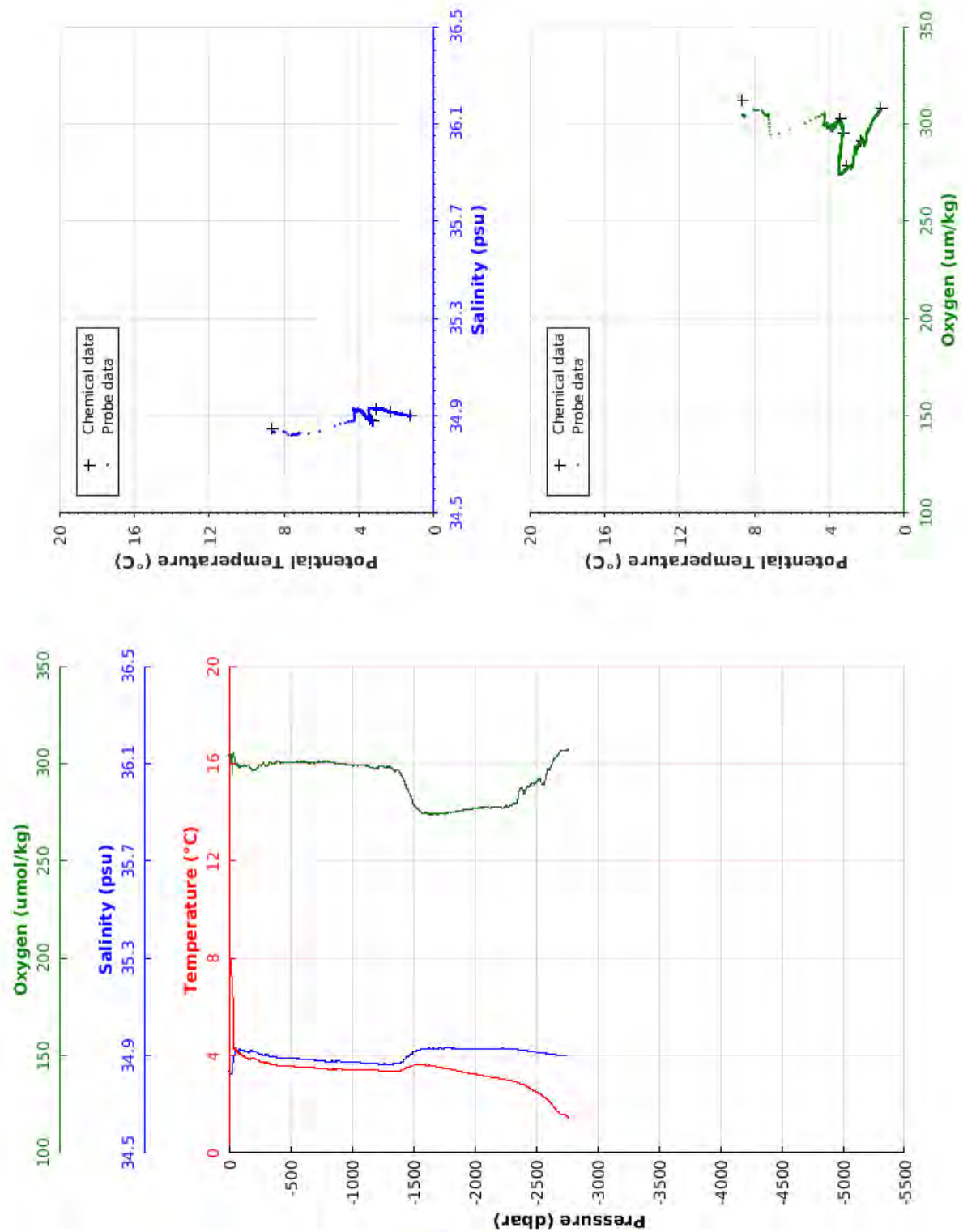
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.203	34.827	304.5	8.203
10.0	7.862	34.824	306.9	7.861
20.0	7.731	34.826	304.4	7.729
30.0	6.919	34.835	303.0	6.916
40.0	4.924	34.880	304.8	4.921
50.0	4.507	34.907	302.5	4.503
100.0	4.160	34.920	298.1	4.153
150.0	3.972	34.922	298.4	3.961
200.0	3.809	34.908	299.2	3.795
250.0	3.736	34.903	299.4	3.719
300.0	3.703	34.902	299.2	3.683
350.0	3.661	34.899	299.1	3.637
400.0	3.640	34.897	298.9	3.613
450.0	3.626	34.897	299.1	3.595
500.0	3.610	34.895	299.4	3.576
550.0	3.597	34.894	299.6	3.559
600.0	3.586	34.893	299.4	3.544
650.0	3.576	34.892	299.3	3.530
700.0	3.568	34.890	298.9	3.518
750.0	3.555	34.889	298.8	3.502
800.0	3.542	34.887	298.9	3.485
850.0	3.534	34.886	298.9	3.474
900.0	3.526	34.885	299.1	3.462
950.0	3.516	34.884	299.3	3.448
1000.0	3.508	34.883	299.1	3.436
1050.0	3.496	34.881	299.0	3.420
1100.0	3.492	34.881	298.8	3.412
1150.0	3.482	34.879	298.6	3.398
1200.0	3.473	34.878	298.2	3.384
1250.0	3.464	34.877	297.8	3.371
1300.0	3.478	34.879	295.4	3.381
1350.0	3.514	34.887	291.1	3.413
1400.0	3.603	34.905	283.0	3.496
1450.0	3.667	34.921	277.0	3.555
1500.0	3.674	34.928	274.4	3.557
1550.0	3.659	34.933	273.2	3.538
1600.0	3.616	34.932	273.3	3.491
1650.0	3.570	34.932	274.3	3.441
1700.0	3.536	34.933	273.5	3.403
1750.0	3.494	34.932	273.8	3.357
1800.0	3.447	34.932	274.1	3.307
1850.0	3.406	34.933	274.2	3.261
1900.0	3.363	34.931	274.7	3.215
1950.0	3.334	34.933	274.8	3.181
2000.0	3.288	34.931	275.5	3.131
2050.0	3.235	34.931	276.3	3.074
2100.0	3.196	34.932	275.7	3.031
2150.0	3.152	34.931	276.3	2.983
2200.0	3.101	34.932	276.8	2.929
2250.0	3.062	34.933	276.1	2.885
2300.0	3.021	34.932	276.6	2.840
2350.0	2.972	34.930	277.9	2.788
2400.0	2.926	34.931	279.8	2.737
2450.0	2.810	34.921	284.8	2.619
2500.0	2.728	34.921	284.8	2.534
2550.0	2.618	34.919	286.1	2.421
2600.0	2.449	34.912	289.6	2.249
2650.0	2.329	34.912	288.5	2.127
2700.0	2.081	34.905	295.0	1.879
2750.0	1.768	34.904	301.6	1.568
2800.0	1.391	34.902	306.8	1.194
2828.0	1.388	34.902	307.3	1.189



Station: 81

Cruise	: BOCATS 2016		
Station	: 82	Cast	: 1
Date	: 12/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2732 m	Organism	: CSIC/IIM VIGO
Position	: N 59 42.29 W 039 55.13		

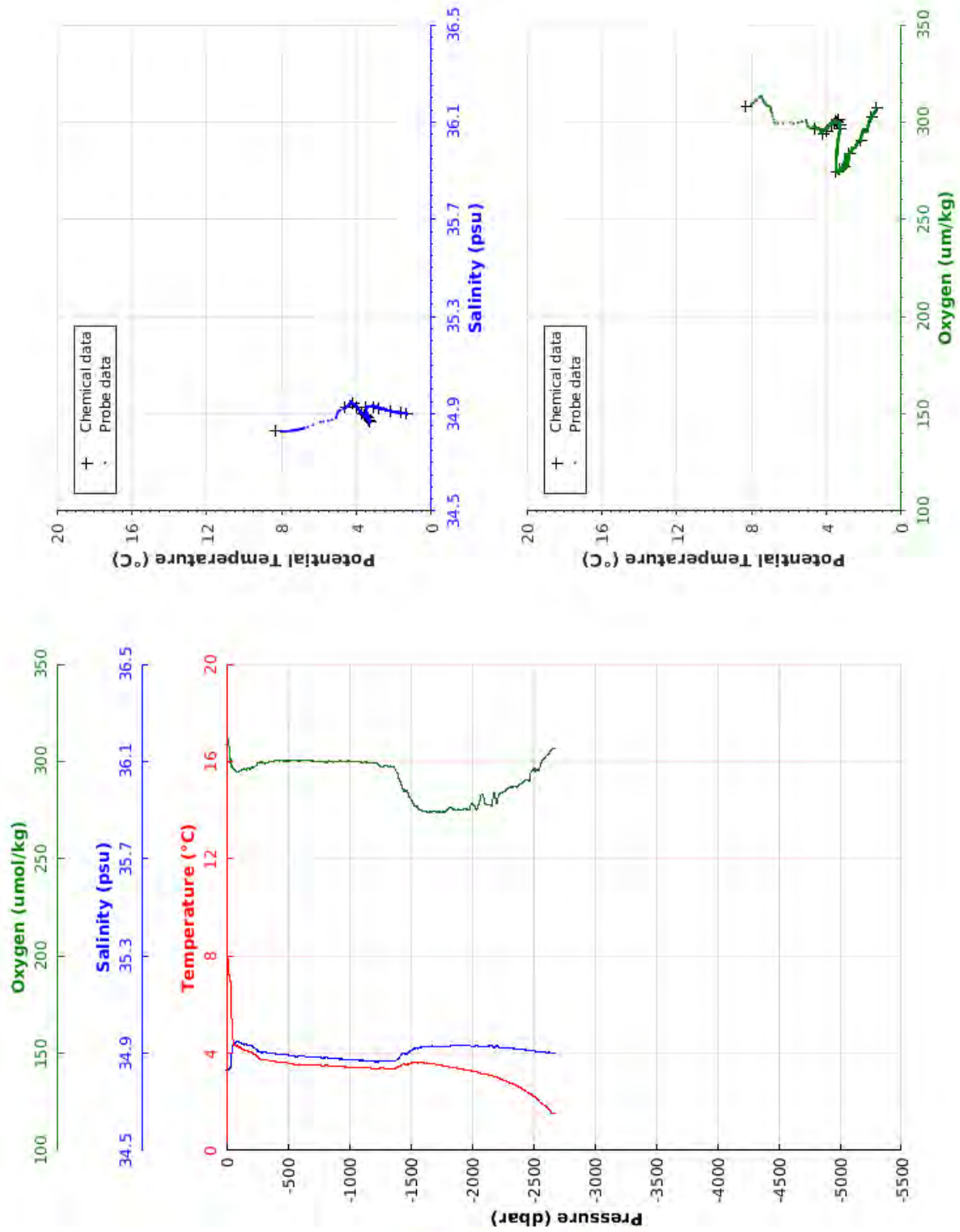
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.642	34.835	304.3	8.642
10.0	8.043	34.836	307.3	8.042
20.0	7.345	34.824	304.4	7.343
30.0	7.138	34.830	294.4	7.135
40.0	4.269	34.881	305.3	4.266
50.0	4.265	34.913	302.2	4.261
100.0	4.040	34.923	298.3	4.033
150.0	3.915	34.918	298.7	3.904
200.0	3.873	34.918	296.9	3.859
250.0	3.753	34.905	299.1	3.736
300.0	3.711	34.904	298.9	3.690
350.0	3.640	34.896	300.2	3.616
400.0	3.585	34.891	301.1	3.557
450.0	3.564	34.889	300.7	3.533
500.0	3.563	34.890	300.5	3.528
550.0	3.532	34.886	300.6	3.494
600.0	3.511	34.884	300.8	3.470
650.0	3.517	34.885	300.2	3.472
700.0	3.491	34.882	300.2	3.442
750.0	3.471	34.879	300.6	3.418
800.0	3.441	34.876	301.1	3.385
850.0	3.447	34.877	300.6	3.387
900.0	3.446	34.877	299.8	3.382
950.0	3.426	34.874	300.1	3.358
1000.0	3.429	34.874	299.1	3.357
1050.0	3.415	34.872	299.0	3.339
1100.0	3.398	34.870	299.1	3.318
1150.0	3.401	34.870	298.2	3.317
1200.0	3.399	34.870	297.2	3.311
1250.0	3.360	34.864	298.5	3.268
1300.0	3.351	34.864	298.2	3.256
1350.0	3.381	34.869	296.1	3.281
1400.0	3.386	34.870	295.3	3.282
1450.0	3.510	34.893	287.4	3.400
1500.0	3.603	34.914	280.6	3.488
1550.0	3.628	34.924	276.0	3.507
1600.0	3.605	34.927	274.8	3.481
1650.0	3.576	34.929	274.2	3.447
1700.0	3.535	34.929	273.9	3.403
1750.0	3.489	34.930	274.5	3.352
1800.0	3.448	34.930	275.0	3.308
1850.0	3.391	34.929	275.3	3.247
1900.0	3.338	34.928	275.9	3.190
1950.0	3.280	34.927	276.2	3.128
2000.0	3.237	34.927	276.9	3.081
2050.0	3.195	34.927	277.5	3.035
2100.0	3.140	34.926	277.6	2.976
2150.0	3.094	34.926	277.7	2.926
2200.0	3.062	34.928	277.6	2.890
2250.0	3.014	34.928	278.1	2.838
2300.0	2.966	34.927	278.7	2.786
2350.0	2.894	34.926	280.8	2.711
2400.0	2.802	34.923	285.8	2.615
2450.0	2.653	34.918	288.2	2.464
2500.0	2.513	34.914	289.9	2.322
2550.0	2.361	34.913	289.5	2.168
2600.0	2.152	34.908	297.0	1.959
2650.0	1.855	34.905	302.2	1.662
2700.0	1.565	34.899	306.2	1.374
2750.0	1.483	34.900	306.6	1.289
2766.0	1.446	34.901	NaN	1.251



Station: 82

Cruise	: BOCATS 2016		
Station	: 83	Cast	: 1
Date	: 12/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2657 m	Organism	: CSIC/IIM VIGO
Position	: N 59 43.46 W 040 15.20		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.033	34.829	308.9	8.033
10.0	7.912	34.828	309.8	7.911
20.0	7.323	34.832	309.9	7.321
30.0	6.966	34.838	306.6	6.964
40.0	5.934	34.867	299.9	5.931
50.0	4.713	34.920	297.6	4.709
100.0	4.282	34.948	294.6	4.275
150.0	4.114	34.934	296.2	4.103
200.0	4.060	34.934	296.1	4.046
250.0	3.863	34.914	298.1	3.845
300.0	3.735	34.903	299.6	3.714
350.0	3.701	34.901	299.5	3.677
400.0	3.655	34.898	300.4	3.628
450.0	3.627	34.896	300.3	3.596
500.0	3.600	34.893	300.4	3.565
550.0	3.555	34.888	300.6	3.516
600.0	3.543	34.888	300.3	3.501
650.0	3.533	34.887	300.5	3.488
700.0	3.511	34.883	300.2	3.462
750.0	3.503	34.883	299.9	3.450
800.0	3.493	34.882	299.9	3.436
850.0	3.480	34.880	300.0	3.420
900.0	3.474	34.879	299.7	3.409
950.0	3.451	34.876	299.8	3.383
1000.0	3.428	34.873	300.1	3.357
1050.0	3.426	34.873	299.9	3.350
1100.0	3.413	34.871	299.6	3.334
1150.0	3.393	34.868	299.5	3.310
1200.0	3.381	34.866	299.3	3.294
1250.0	3.398	34.870	297.7	3.306
1300.0	3.375	34.866	297.8	3.279
1350.0	3.374	34.867	297.3	3.274
1400.0	3.419	34.875	294.0	3.315
1450.0	3.561	34.901	284.7	3.451
1500.0	3.588	34.909	281.1	3.473
1550.0	3.615	34.921	276.8	3.495
1600.0	3.611	34.926	274.7	3.486
1650.0	3.585	34.929	274.0	3.456
1700.0	3.551	34.930	274.2	3.418
1750.0	3.505	34.930	274.0	3.368
1800.0	3.454	34.929	275.0	3.313
1850.0	3.401	34.930	275.7	3.257
1900.0	3.358	34.930	275.3	3.210
1950.0	3.321	34.931	275.5	3.169
2000.0	3.266	34.930	278.0	3.109
2050.0	3.226	34.931	275.8	3.066
2100.0	3.131	34.927	281.3	2.968
2150.0	3.100	34.930	277.8	2.932
2200.0	3.036	34.930	279.2	2.864
2250.0	2.921	34.923	284.0	2.746
2300.0	2.806	34.921	286.1	2.629
2350.0	2.709	34.919	286.9	2.529
2400.0	2.581	34.916	288.5	2.398
2450.0	2.405	34.912	290.3	2.221
2500.0	2.241	34.909	295.6	2.055
2550.0	2.033	34.907	295.0	1.847
2600.0	1.809	34.904	301.8	1.622
2650.0	1.540	34.901	306.0	1.354
2689.0	1.526	34.900	306.7	1.337



Station: 83

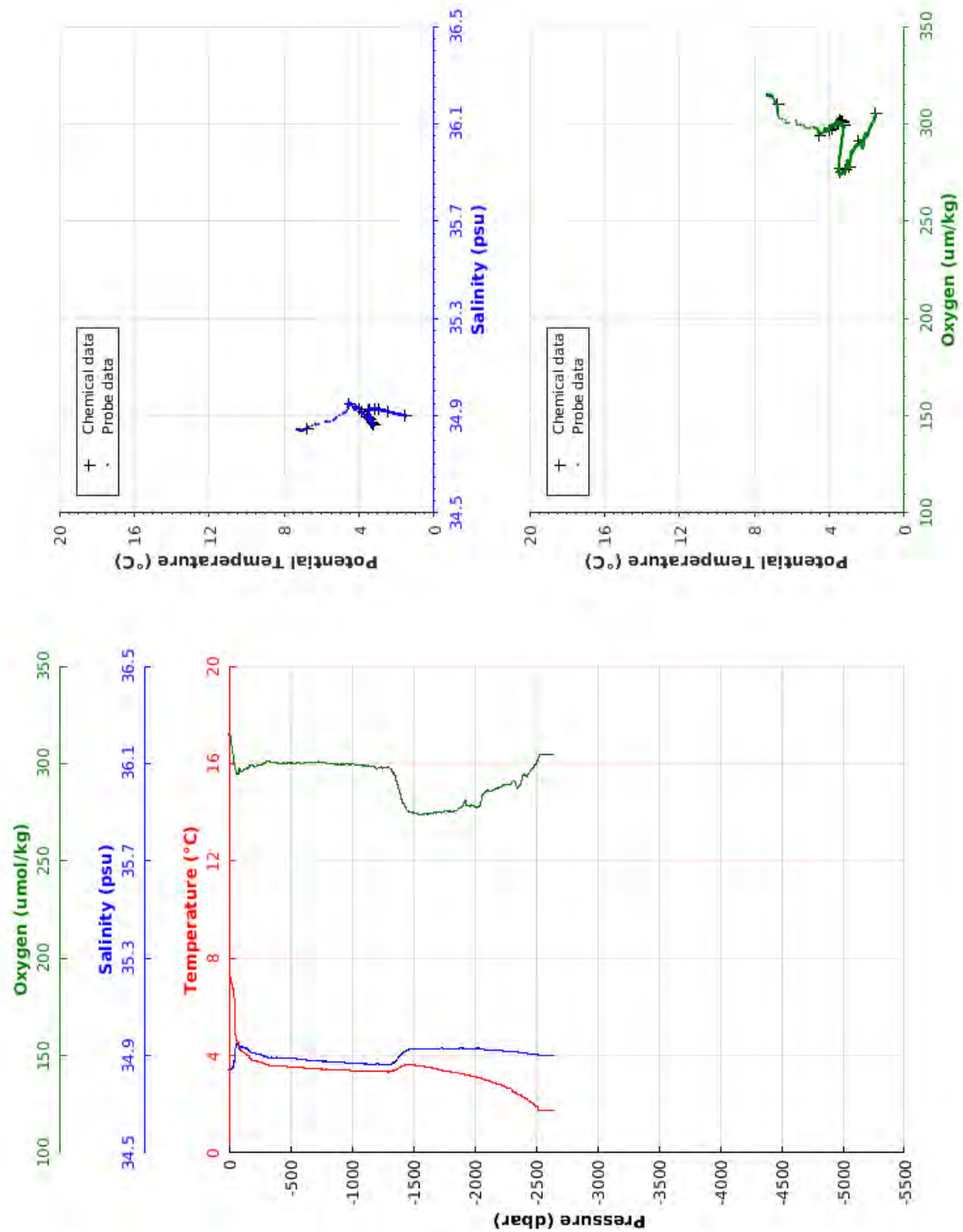


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| Cruise      : BOCATS 2016
| Station     : 84           Cast      : 1
| Date        : 12/07/2016   Ship       : B/O Sarmiento de Gamboa
| Depth       : 2629 m       Organism  : CSIC/IIM VIGO
| Position    : N 59 44.39
|              W 040 34.85
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.301	34.843	315.1	7.301
10.0	7.178	34.843	315.0	7.177
20.0	6.993	34.841	312.9	6.991
30.0	6.778	34.850	307.9	6.775
40.0	6.697	34.855	303.0	6.694
50.0	5.293	34.888	298.0	5.289
100.0	4.215	34.937	296.2	4.208
150.0	4.016	34.928	297.5	4.006
200.0	3.805	34.909	299.2	3.791
250.0	3.731	34.904	299.2	3.714
300.0	3.644	34.896	300.1	3.624
350.0	3.596	34.892	300.4	3.572
400.0	3.571	34.891	300.1	3.544
450.0	3.561	34.890	300.1	3.530
500.0	3.542	34.889	300.3	3.507
550.0	3.527	34.887	300.2	3.489
600.0	3.506	34.885	300.1	3.464
650.0	3.472	34.881	300.6	3.427
700.0	3.448	34.878	300.6	3.399
750.0	3.442	34.877	300.8	3.389
800.0	3.440	34.876	300.3	3.383
850.0	3.425	34.874	299.8	3.365
900.0	3.419	34.874	299.4	3.356
950.0	3.396	34.870	299.8	3.328
1000.0	3.383	34.868	299.6	3.311
1050.0	3.372	34.867	299.5	3.297
1100.0	3.367	34.866	298.7	3.287
1150.0	3.356	34.865	298.9	3.273
1200.0	3.369	34.867	297.5	3.281
1250.0	3.351	34.865	298.1	3.260
1300.0	3.331	34.861	298.4	3.236
1350.0	3.389	34.872	294.8	3.289
1400.0	3.536	34.901	284.5	3.429
1450.0	3.623	34.923	276.2	3.512
1500.0	3.607	34.926	274.8	3.491
1550.0	3.590	34.930	274.0	3.470
1600.0	3.540	34.929	274.1	3.416
1650.0	3.497	34.928	274.5	3.370
1700.0	3.436	34.929	275.0	3.305
1750.0	3.380	34.928	275.3	3.245
1800.0	3.338	34.928	275.6	3.199
1850.0	3.296	34.927	275.6	3.153
1900.0	3.245	34.930	278.0	3.098
1950.0	3.195	34.930	278.4	3.044
2000.0	3.133	34.929	277.9	2.979
2050.0	3.080	34.929	279.1	2.922
2100.0	2.968	34.923	286.0	2.807
2150.0	2.894	34.922	286.2	2.729
2200.0	2.827	34.921	287.5	2.659
2250.0	2.725	34.919	289.0	2.554
2300.0	2.613	34.917	289.5	2.439
2350.0	2.412	34.915	287.5	2.237
2400.0	2.288	34.910	294.3	2.111
2450.0	2.106	34.907	295.5	1.927
2500.0	1.931	34.905	300.2	1.751
2550.0	1.733	34.901	304.5	1.552
2600.0	1.734	34.900	304.7	1.548
2650.0	1.730	34.900	304.8	1.541
2659.0	1.733	34.900	304.9	1.542



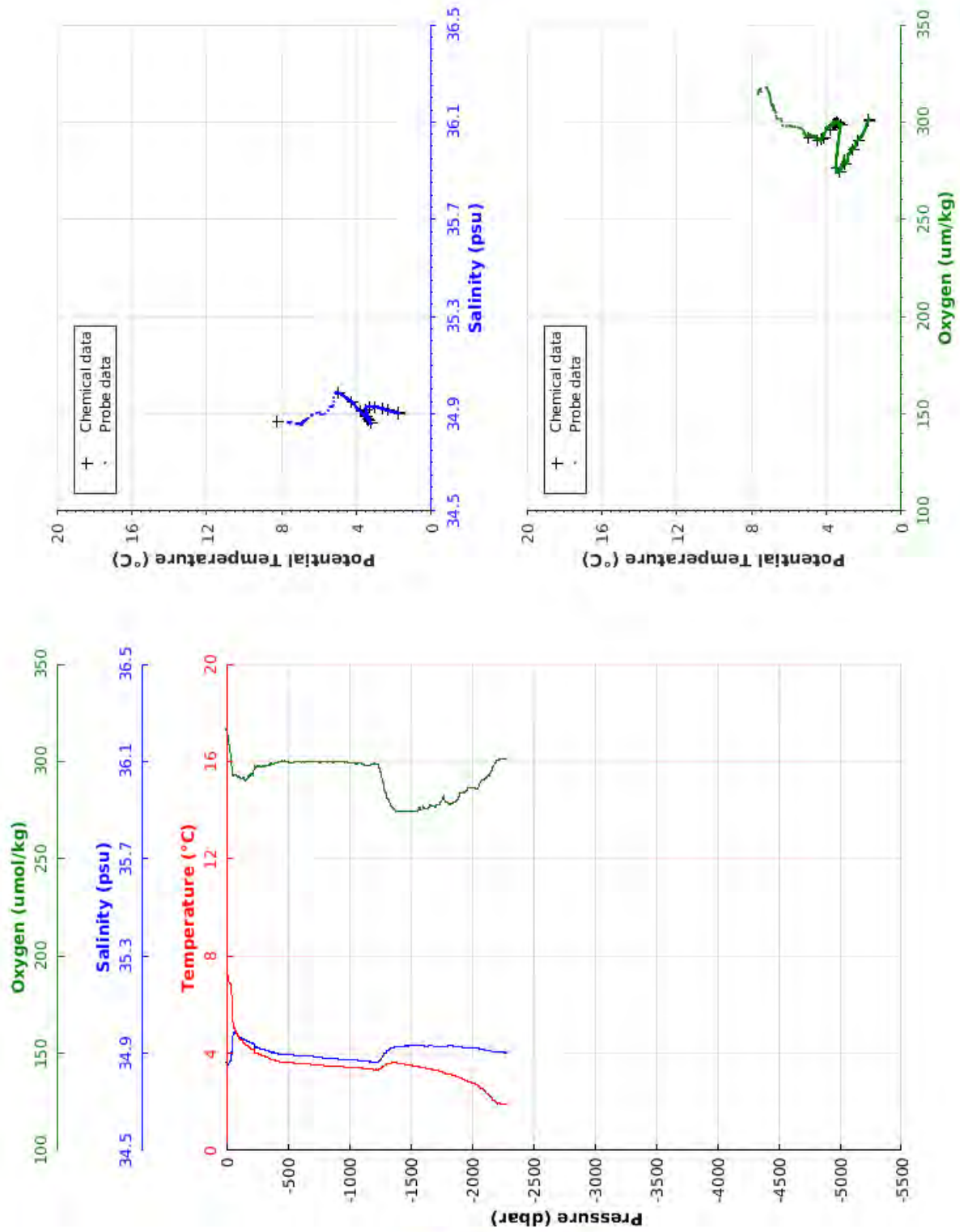
Station: 84

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| Cruise      : BOCATS 2016
| Station     : 85           Cast      : 1
| Date        : 12/07/2016   Ship      : B/O Sarmiento de Gamboa
| Depth       : 2270 m       Organism  : CSIC/IIM VIGO
| Position    : N 59 45.45
|              W 040 54.44
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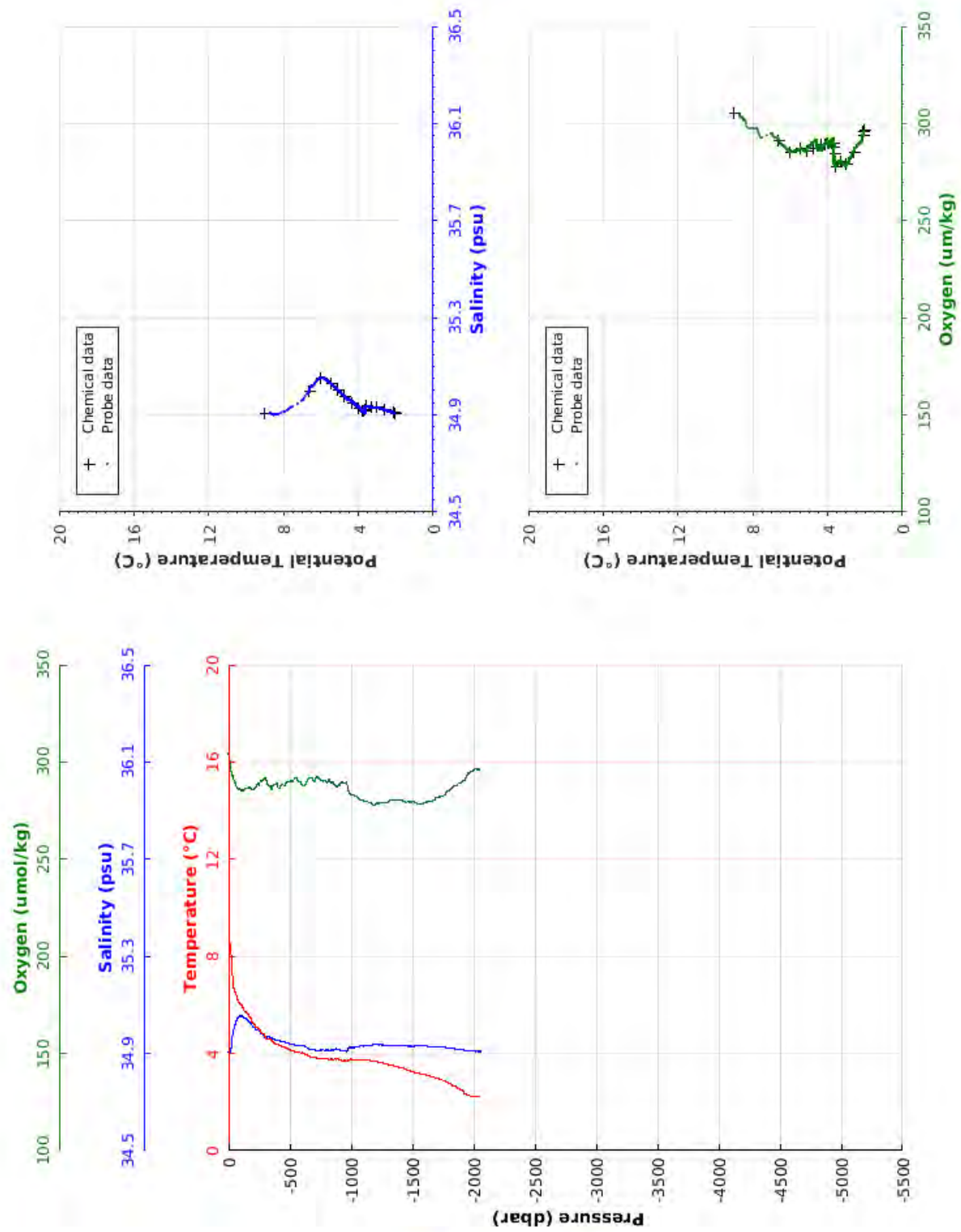
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.539	34.864	316.8	7.539
10.0	7.235	34.860	317.5	7.234
20.0	6.979	34.857	310.5	6.977
30.0	6.868	34.866	308.5	6.865
40.0	6.676	34.877	301.9	6.673
50.0	5.515	34.914	297.3	5.511
100.0	4.644	34.971	292.0	4.637
150.0	4.368	34.955	291.2	4.357
200.0	4.185	34.942	293.3	4.171
250.0	4.014	34.926	297.0	3.996
300.0	3.885	34.916	297.6	3.864
350.0	3.795	34.909	298.0	3.771
400.0	3.704	34.900	299.0	3.677
450.0	3.645	34.895	300.1	3.614
500.0	3.615	34.893	300.1	3.580
550.0	3.594	34.891	299.6	3.556
600.0	3.580	34.891	299.8	3.538
650.0	3.563	34.889	299.8	3.517
700.0	3.544	34.888	300.0	3.495
750.0	3.523	34.885	299.8	3.470
800.0	3.485	34.880	299.9	3.428
850.0	3.476	34.880	299.7	3.416
900.0	3.461	34.877	299.9	3.397
950.0	3.441	34.875	299.9	3.373
1000.0	3.429	34.874	299.3	3.358
1050.0	3.410	34.872	299.2	3.334
1100.0	3.384	34.868	299.0	3.305
1150.0	3.367	34.866	298.1	3.283
1200.0	3.332	34.862	298.7	3.245
1250.0	3.367	34.869	296.4	3.275
1300.0	3.530	34.901	284.3	3.432
1350.0	3.608	34.922	276.6	3.505
1400.0	3.596	34.928	274.5	3.489
1450.0	3.548	34.929	274.2	3.437
1500.0	3.509	34.932	274.6	3.394
1550.0	3.460	34.932	274.5	3.342
1600.0	3.408	34.931	275.3	3.285
1650.0	3.367	34.931	276.5	3.241
1700.0	3.293	34.928	276.7	3.163
1750.0	3.234	34.929	279.3	3.101
1800.0	3.152	34.930	278.9	3.015
1850.0	3.093	34.930	279.0	2.953
1900.0	2.994	34.926	282.2	2.850
1950.0	2.884	34.924	284.3	2.738
2000.0	2.783	34.922	286.4	2.633
2050.0	2.673	34.921	286.1	2.521
2100.0	2.482	34.914	290.6	2.328
2150.0	2.224	34.910	293.3	2.071
2200.0	1.963	34.904	299.6	1.810
2250.0	1.931	34.903	301.1	1.773
2294.0	1.924	34.903	301.5	1.763



Station: 85

Cruise	: BOCATS 2016		
Station	: 86	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 2042 m	Organism	: CSIC/IIM VIGO
Position	: N 59 46.30		
	W 041 17.71		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.714	34.908	304.6	8.714
10.0	8.566	34.901	303.3	8.565
20.0	8.275	34.904	297.9	8.273
30.0	7.531	34.935	292.7	7.528
40.0	6.678	34.991	292.8	6.675
50.0	6.593	35.013	290.2	6.588
100.0	6.038	35.054	285.7	6.029
150.0	5.668	35.042	286.3	5.656
200.0	5.258	35.013	285.9	5.242
250.0	4.997	34.996	288.8	4.977
300.0	4.664	34.968	291.7	4.641
350.0	4.542	34.965	287.1	4.515
400.0	4.375	34.954	289.0	4.345
450.0	4.270	34.949	288.2	4.236
500.0	4.143	34.939	290.1	4.106
550.0	4.074	34.933	291.8	4.033
600.0	4.030	34.933	288.8	3.986
650.0	3.893	34.920	290.8	3.846
700.0	3.849	34.918	290.1	3.798
750.0	3.789	34.914	291.1	3.734
800.0	3.770	34.913	290.2	3.712
850.0	3.748	34.913	289.7	3.686
900.0	3.754	34.917	287.7	3.688
950.0	3.699	34.911	289.2	3.629
1000.0	3.760	34.924	283.5	3.686
1050.0	3.735	34.926	282.3	3.656
1100.0	3.748	34.931	280.2	3.665
1150.0	3.710	34.932	279.4	3.623
1200.0	3.679	34.936	277.8	3.588
1250.0	3.614	34.936	279.0	3.519
1300.0	3.562	34.935	279.2	3.464
1350.0	3.493	34.933	280.4	3.391
1400.0	3.436	34.933	280.5	3.331
1450.0	3.344	34.931	279.0	3.236
1500.0	3.262	34.930	279.3	3.150
1550.0	3.187	34.931	278.3	3.072
1600.0	3.131	34.931	278.8	3.012
1650.0	3.052	34.929	279.9	2.930
1700.0	2.985	34.927	281.6	2.860
1750.0	2.884	34.926	282.6	2.755
1800.0	2.764	34.922	285.3	2.633
1850.0	2.650	34.919	287.7	2.516
1900.0	2.495	34.916	289.5	2.358
1950.0	2.270	34.911	293.2	2.133
2000.0	2.233	34.909	295.8	2.092
2050.0	2.235	34.909	296.2	2.090
2059.0	2.236	34.909	296.4	2.090

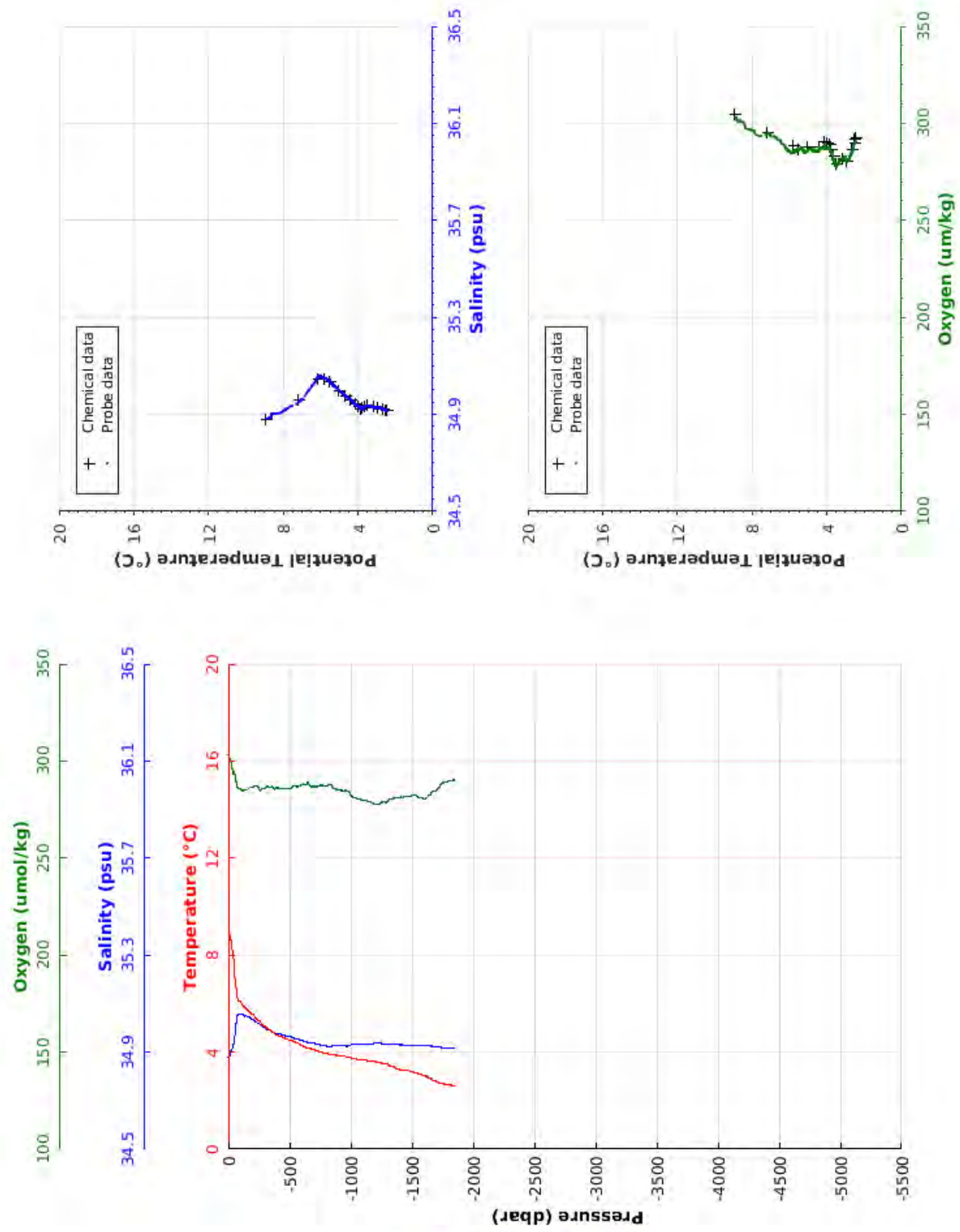


Station: 86



Cruise	: BOCATS 2016		
Station	: 87	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1845 m	Organism	: CSIC/IIM VIGO
Position	: N 59 47.86 W 041 43.69		

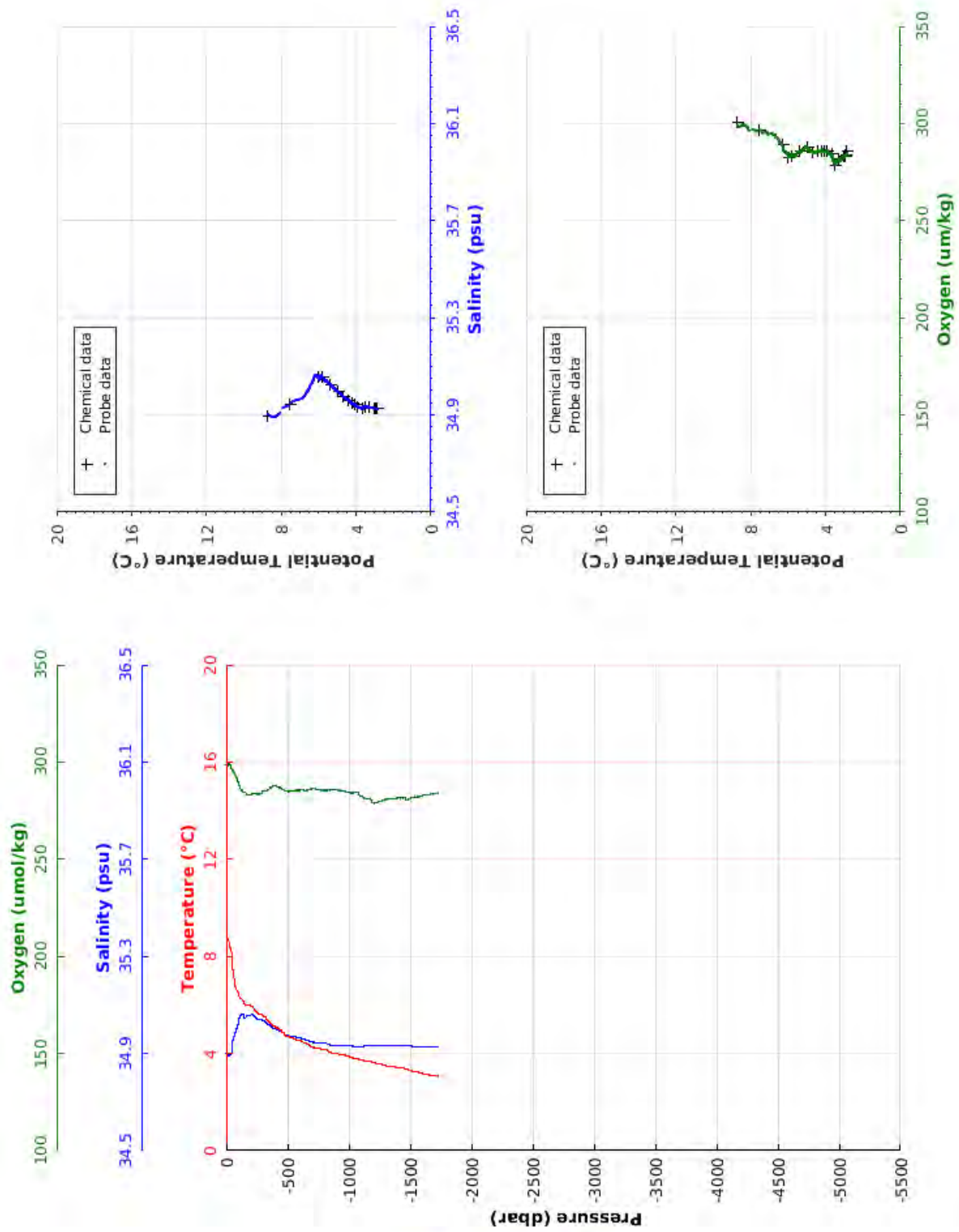
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.883	34.881	303.0	8.883
10.0	8.852	34.881	302.7	8.851
20.0	8.639	34.897	301.2	8.637
30.0	8.362	34.904	297.4	8.359
40.0	7.875	34.921	296.0	7.871
50.0	7.152	34.952	294.6	7.147
100.0	6.070	35.056	285.8	6.062
150.0	5.788	35.049	285.1	5.775
200.0	5.550	35.036	286.5	5.534
250.0	5.278	35.017	286.3	5.258
300.0	5.058	35.001	285.9	5.034
350.0	4.864	34.988	286.6	4.837
400.0	4.697	34.976	286.1	4.667
450.0	4.612	34.971	285.7	4.577
500.0	4.503	34.964	285.8	4.465
550.0	4.393	34.956	287.1	4.351
600.0	4.276	34.948	287.8	4.230
650.0	4.147	34.938	288.9	4.098
700.0	4.089	34.936	287.3	4.037
750.0	4.018	34.931	287.2	3.962
800.0	3.940	34.925	287.4	3.880
850.0	3.892	34.925	287.0	3.829
900.0	3.854	34.927	285.4	3.786
950.0	3.828	34.927	284.7	3.757
1000.0	3.770	34.929	283.4	3.696
1050.0	3.713	34.933	280.8	3.634
1100.0	3.667	34.934	279.5	3.585
1150.0	3.646	34.935	279.0	3.560
1200.0	3.615	34.936	277.9	3.525
1250.0	3.567	34.935	278.5	3.474
1300.0	3.497	34.934	278.8	3.400
1350.0	3.410	34.932	280.6	3.310
1400.0	3.275	34.930	281.2	3.172
1450.0	3.245	34.930	281.7	3.137
1500.0	3.201	34.928	282.1	3.090
1550.0	3.121	34.929	281.5	3.006
1600.0	3.037	34.929	280.6	2.920
1650.0	2.908	34.926	282.2	2.787
1700.0	2.799	34.923	284.7	2.676
1750.0	2.703	34.919	288.4	2.577
1800.0	2.646	34.917	289.7	2.516
1850.0	2.599	34.916	290.2	2.466
1860.0	2.598	34.916	290.6	2.464



Station: 87

Cruise	: BOCATS 2016		
Station	: 88	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1723 m	Organism	: CSIC/IIM VIGO
Position	: N 59 47.82		
	W 042 0.19		

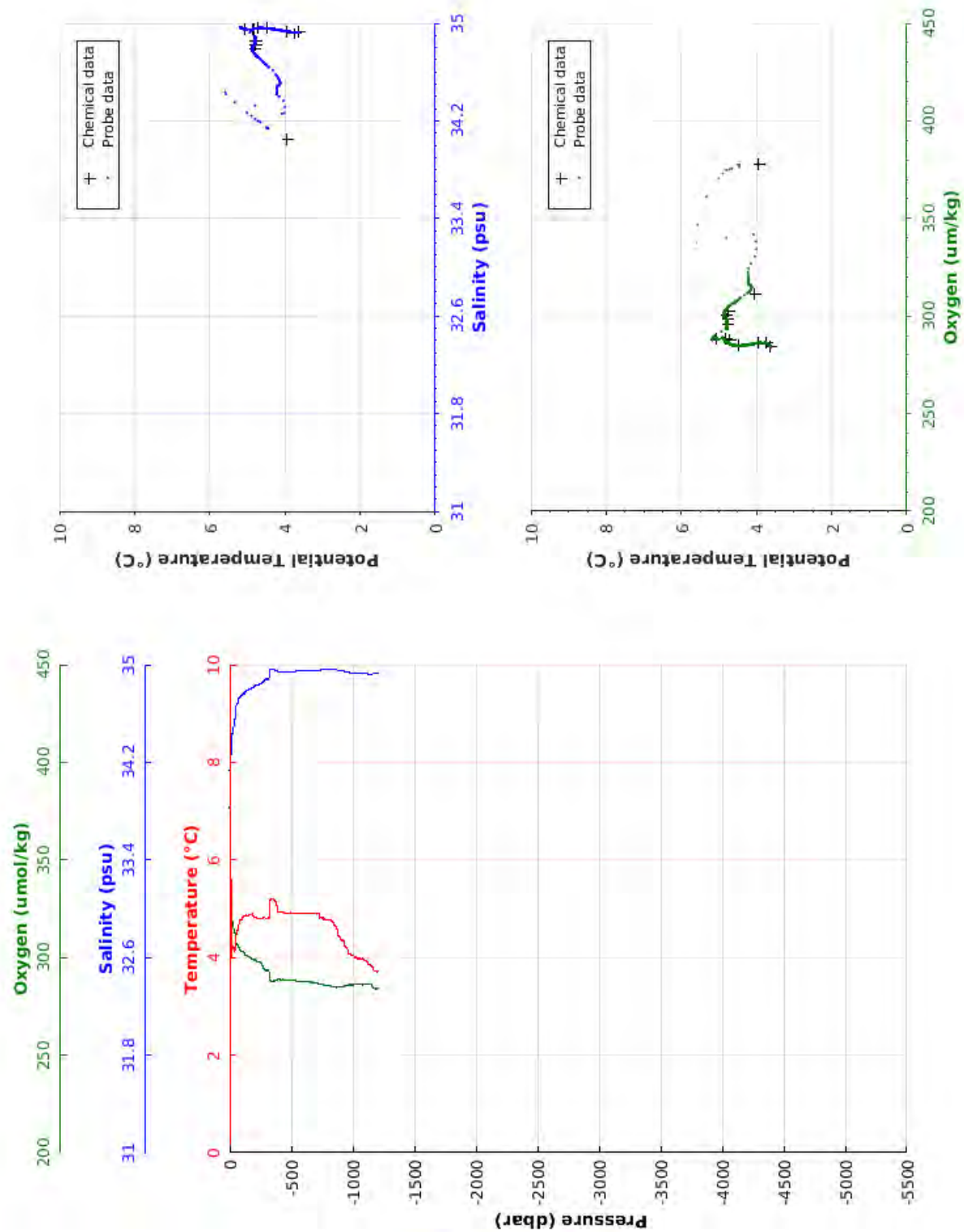
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.710	34.902	298.8	8.710
10.0	8.711	34.902	298.7	8.710
20.0	8.629	34.898	298.3	8.627
30.0	8.399	34.893	299.0	8.396
40.0	8.248	34.896	298.6	8.244
50.0	7.772	34.933	296.5	7.767
100.0	6.472	35.019	290.2	6.463
150.0	6.033	35.051	284.5	6.020
200.0	5.948	35.058	283.0	5.931
250.0	5.713	35.044	283.9	5.692
300.0	5.558	35.036	284.7	5.533
350.0	5.321	35.019	285.9	5.293
400.0	5.097	35.002	288.0	5.065
450.0	4.935	34.991	286.7	4.900
500.0	4.713	34.974	285.0	4.674
550.0	4.627	34.970	285.0	4.584
600.0	4.529	34.965	285.4	4.483
650.0	4.412	34.957	285.4	4.362
700.0	4.267	34.947	286.1	4.214
750.0	4.208	34.945	285.8	4.151
800.0	4.157	34.942	285.5	4.096
850.0	4.057	34.936	285.6	3.992
900.0	3.990	34.932	285.8	3.922
950.0	3.960	34.932	285.1	3.889
1000.0	3.872	34.931	284.5	3.796
1050.0	3.810	34.929	284.3	3.731
1100.0	3.731	34.928	282.7	3.648
1150.0	3.694	34.933	281.3	3.608
1200.0	3.633	34.935	279.0	3.543
1250.0	3.560	34.934	279.6	3.466
1300.0	3.497	34.933	280.8	3.400
1350.0	3.461	34.932	281.2	3.360
1400.0	3.411	34.932	281.5	3.307
1450.0	3.386	34.931	281.4	3.277
1500.0	3.305	34.931	281.1	3.193
1550.0	3.263	34.930	282.0	3.147
1600.0	3.175	34.928	282.7	3.056
1650.0	3.128	34.927	283.0	3.005
1700.0	3.084	34.927	283.5	2.957
1734.0	2.965	34.924	284.9	2.837



Station: 88

Cruise	: BOCATS 2016		
Station	: 89	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1217 m	Organism	: CSIC/IIM VIGO
Position	: N 59 48.50 W 042 14.05		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.454	34.138	376.7	4.454
10.0	4.795	34.217	374.8	4.794
20.0	4.045	34.364	330.5	4.044
30.0	4.207	34.466	318.2	4.204
40.0	4.146	34.524	314.3	4.144
50.0	4.248	34.581	311.9	4.244
100.0	4.801	34.746	303.5	4.793
150.0	4.853	34.792	300.8	4.841
200.0	4.823	34.820	299.1	4.808
250.0	4.801	34.839	297.7	4.781
300.0	4.805	34.880	293.4	4.782
350.0	5.207	34.963	287.9	5.179
400.0	4.937	34.943	289.0	4.906
450.0	4.919	34.944	288.4	4.883
500.0	4.918	34.945	288.3	4.878
550.0	4.901	34.948	287.8	4.857
600.0	4.900	34.949	287.8	4.851
650.0	4.898	34.950	287.6	4.846
700.0	4.898	34.954	287.1	4.841
750.0	4.821	34.957	286.3	4.760
800.0	4.769	34.960	285.7	4.704
850.0	4.666	34.961	284.8	4.598
900.0	4.383	34.952	284.9	4.312
950.0	4.194	34.942	285.7	4.120
1000.0	4.043	34.934	286.2	3.966
1050.0	3.980	34.930	286.3	3.900
1100.0	3.942	34.929	286.0	3.857
1150.0	3.821	34.924	286.2	3.734
1200.0	3.710	34.927	284.0	3.619
1221.0	3.721	34.927	284.3	3.629



Station: 89



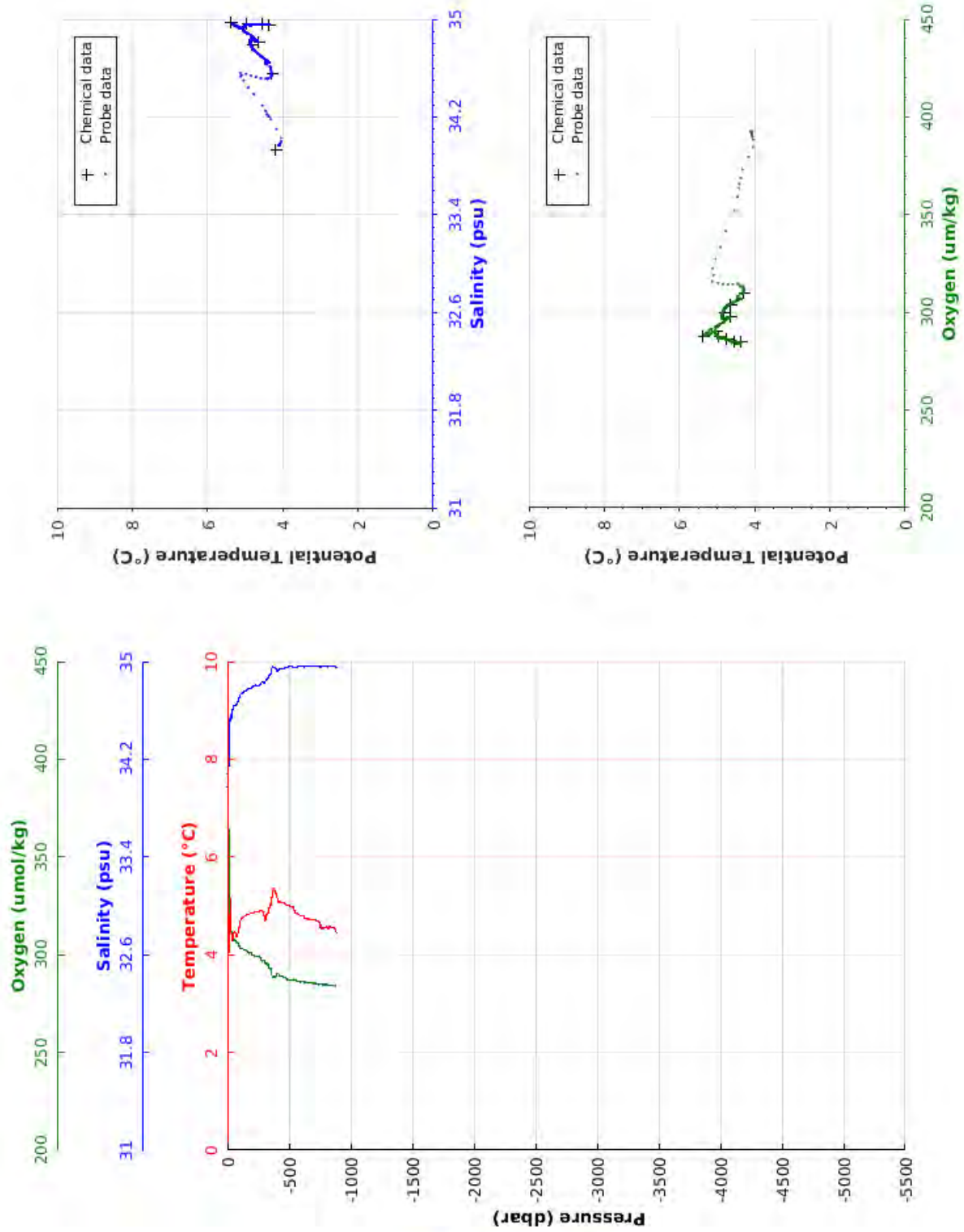


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| Cruise      : BOCATS 2016 |
| Station     : 90          Cast      : 1 |
| Date        : 13/07/2016   Ship      : B/O Sarmiento de Gamboa |
| Depth       : 897 m        Organism  : CSIC/IIM VIGO |
| Position    : N 59 48.95 |
|              W 042 16.51 |
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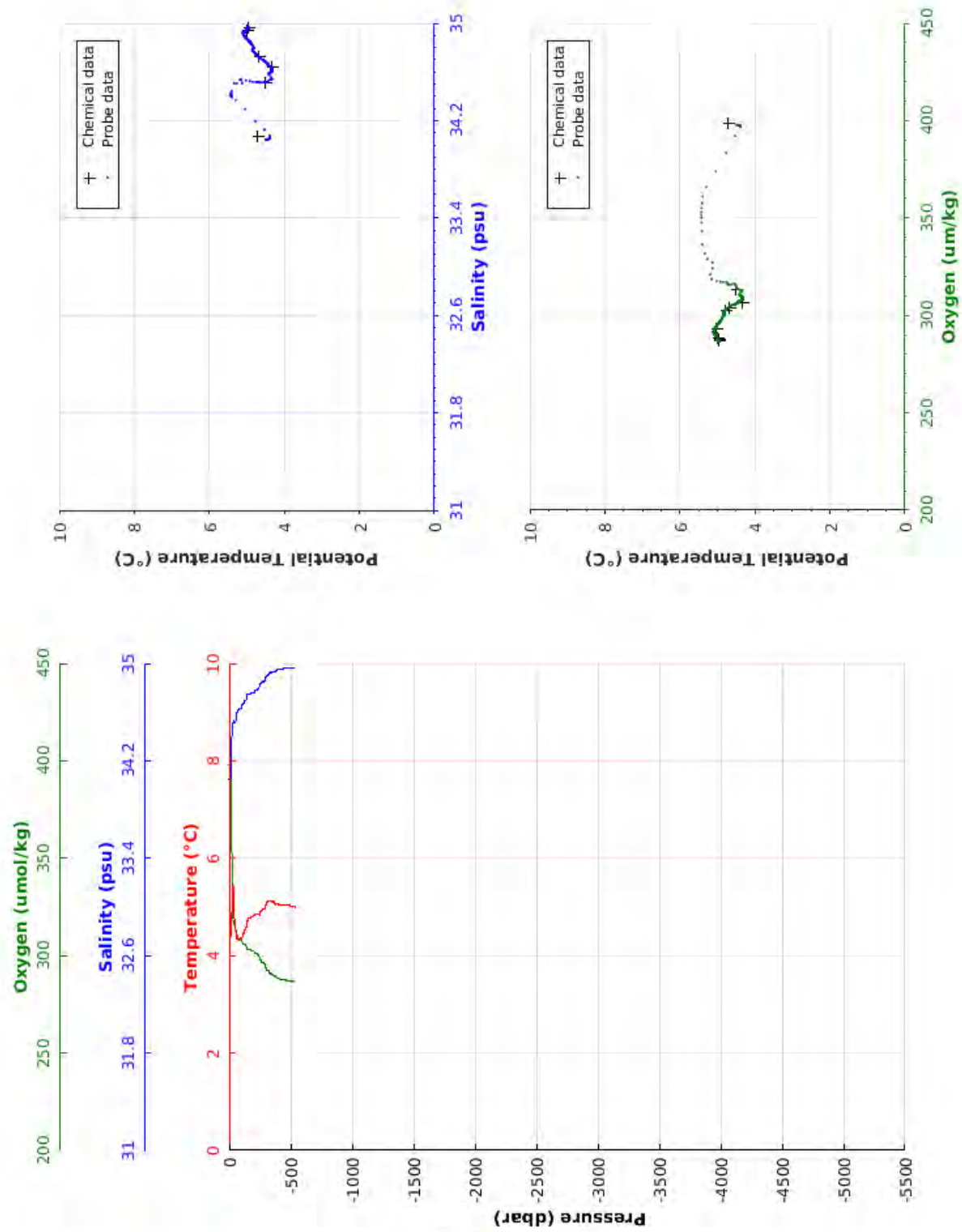
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.100	33.968	392.3	4.099
10.0	4.066	33.982	390.4	4.065
20.0	4.546	34.293	351.8	4.545
30.0	4.584	34.516	314.4	4.582
40.0	4.300	34.556	311.5	4.297
50.0	4.423	34.629	308.5	4.419
100.0	4.618	34.704	304.8	4.611
150.0	4.802	34.758	302.2	4.790
200.0	4.849	34.783	300.8	4.834
250.0	4.883	34.805	299.3	4.864
300.0	4.755	34.826	297.0	4.732
350.0	5.021	34.896	292.8	4.994
400.0	5.183	34.934	289.5	5.151
450.0	5.067	34.939	288.8	5.031
500.0	5.023	34.959	287.0	4.983
550.0	4.880	34.953	287.1	4.836
600.0	4.797	34.958	286.1	4.749
650.0	4.728	34.958	285.9	4.676
700.0	4.716	34.958	285.5	4.660
750.0	4.597	34.956	284.8	4.537
800.0	4.570	34.958	284.8	4.507
850.0	4.554	34.958	284.5	4.486
897.0	4.439	34.954	284.7	4.368



Station: 90

Cruise	: BOCATS 2016		
Station	: 91	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 550 m	Organism	: CSIC/IIM VIGO
Position	: N 59 49.09 W 042 18.79		

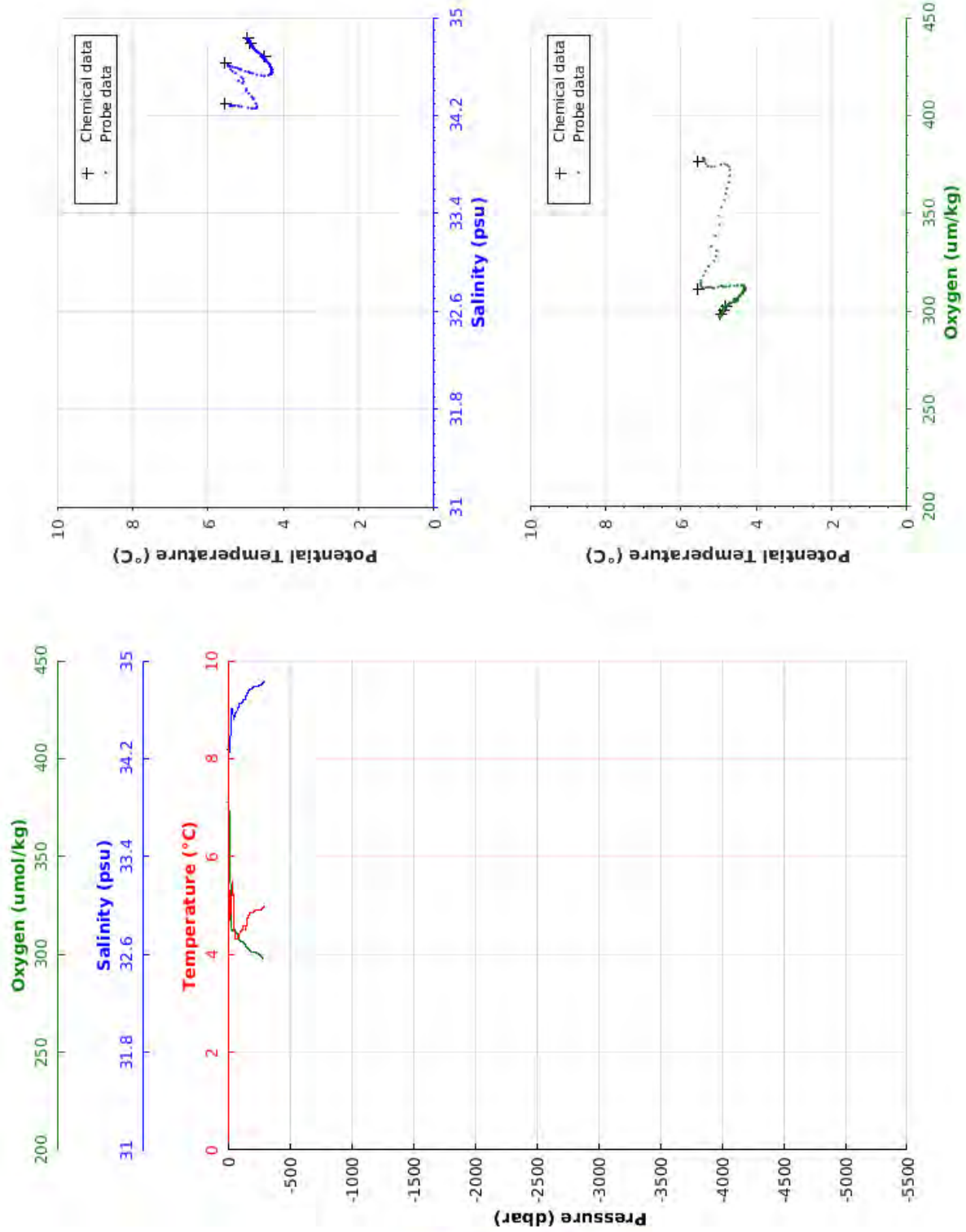
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.474	34.044	397.7	4.474
10.0	4.445	34.045	397.6	4.444
20.0	4.532	34.125	392.1	4.531
30.0	5.424	34.418	347.8	5.421
40.0	4.926	34.523	317.3	4.923
50.0	4.520	34.515	315.6	4.516
100.0	4.345	34.629	308.0	4.338
150.0	4.730	34.736	303.7	4.719
200.0	4.817	34.761	302.2	4.802
250.0	4.866	34.819	299.5	4.846
300.0	5.058	34.884	294.2	5.034
350.0	5.118	34.932	290.3	5.090
400.0	5.056	34.948	288.4	5.024
450.0	5.043	34.958	287.7	5.007
500.0	5.020	34.963	287.0	4.979
544.0	5.005	34.962	286.9	4.961



Station: 91

Cruise	: BOCATS 2016			
Station	: 92	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 307 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 49.28			
	W 042 23.88			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	5.409	34.279	377.9	5.409
10.0	5.339	34.282	375.3	5.338
20.0	4.728	34.298	365.8	4.727
30.0	5.072	34.499	328.0	5.070
40.0	5.413	34.601	311.9	5.410
50.0	4.815	34.544	312.5	4.811
100.0	4.472	34.649	307.4	4.464
150.0	4.599	34.699	305.0	4.588
200.0	4.848	34.774	301.3	4.833
250.0	4.904	34.796	300.5	4.885
298.0	4.999	34.829	297.1	4.975

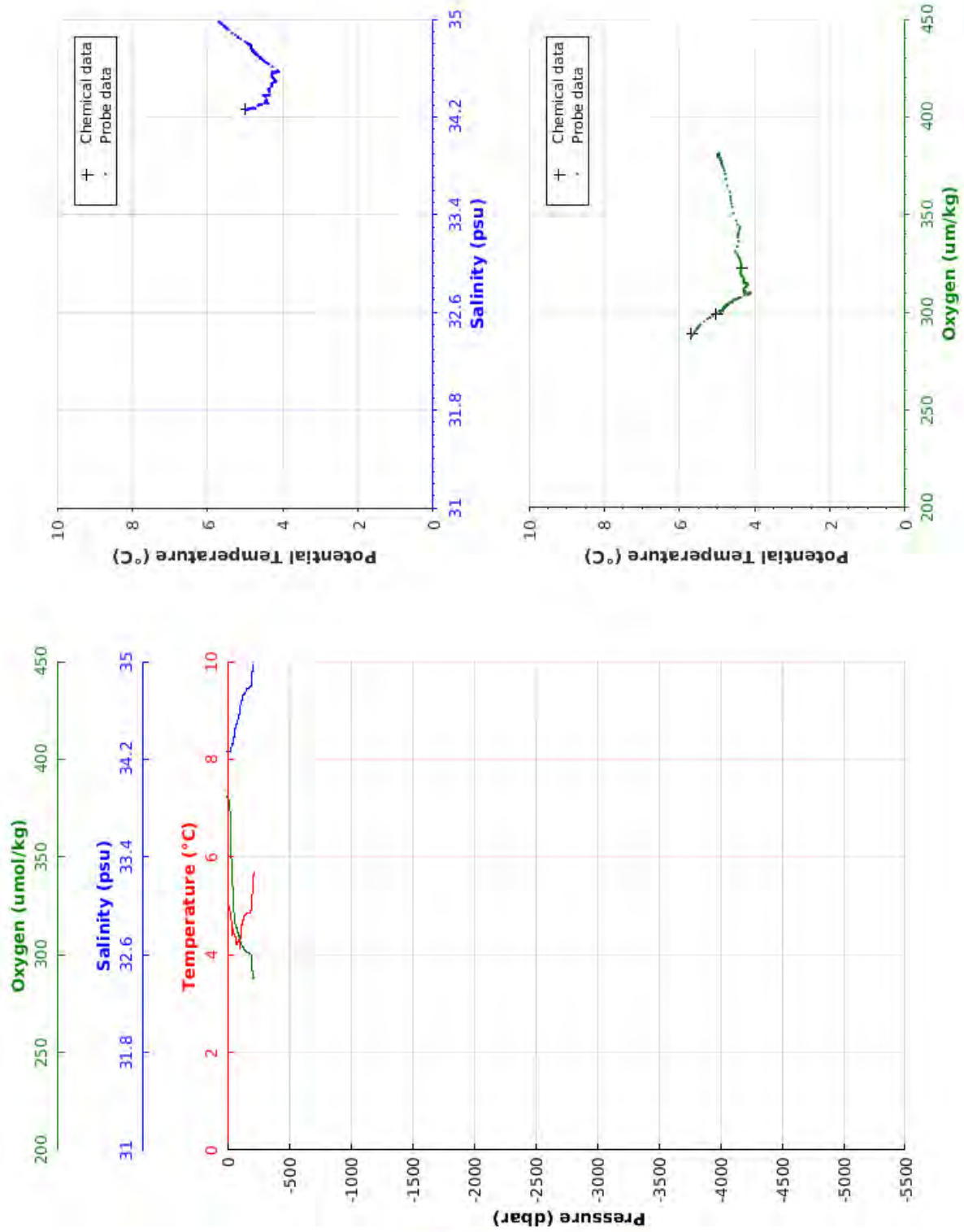


Station: 92



Cruise	: BOCATS 2016			
Station	: 93	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 228 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 49.84			
	W 042 31.21			

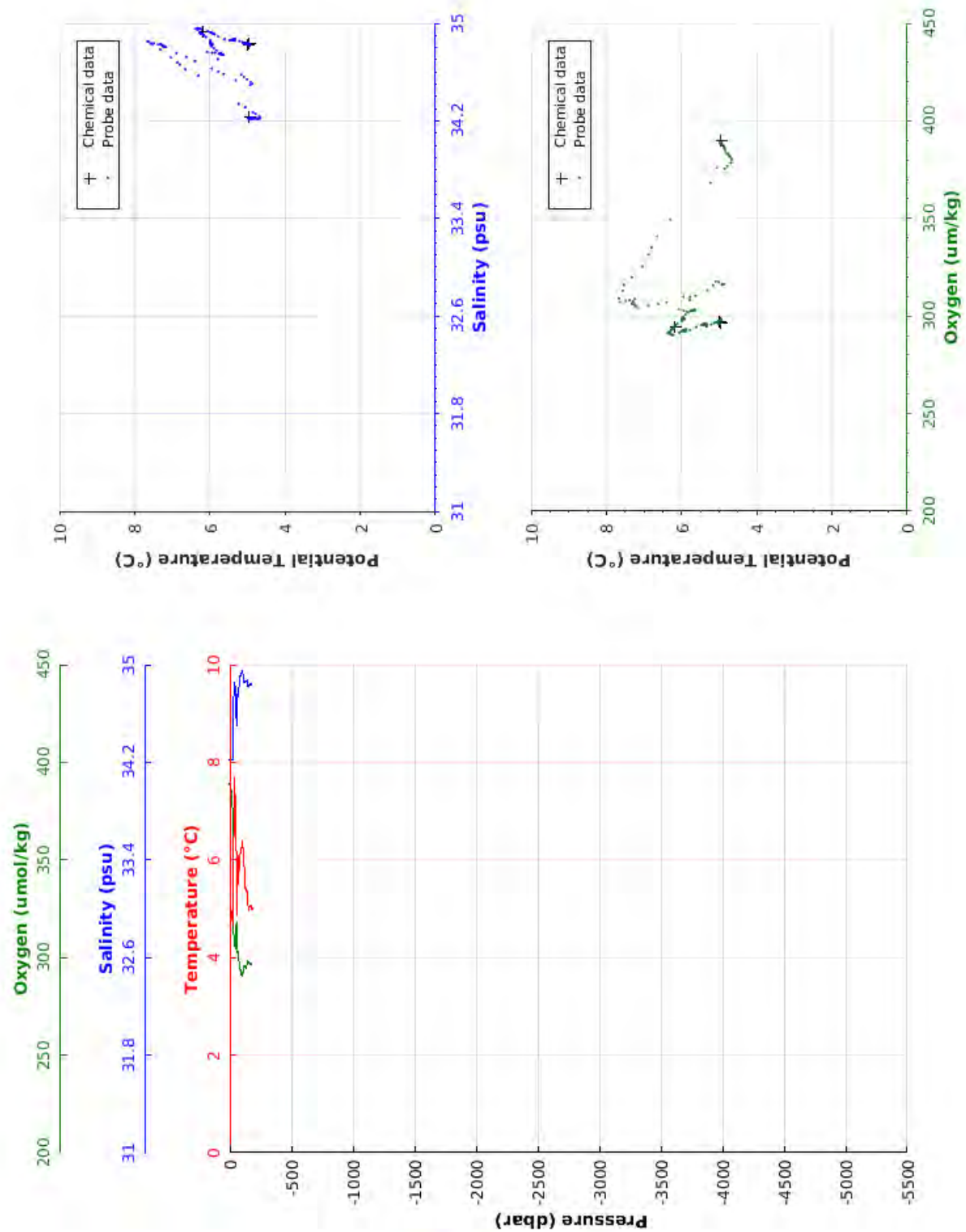
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.951	34.258	381.1	4.951
10.0	4.976	34.261	380.8	4.975
20.0	4.926	34.262	378.2	4.925
30.0	4.773	34.276	368.3	4.771
40.0	4.464	34.316	344.9	4.461
50.0	4.523	34.377	331.3	4.519
100.0	4.168	34.566	309.5	4.161
150.0	4.819	34.748	302.5	4.807
200.0	5.201	34.852	297.5	5.185
221.0	5.710	34.977	287.8	5.692



Station: 93

Cruise	: BOCATS 2016			
Station	: 94	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 201 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 50.74			
	W 042 36.04			

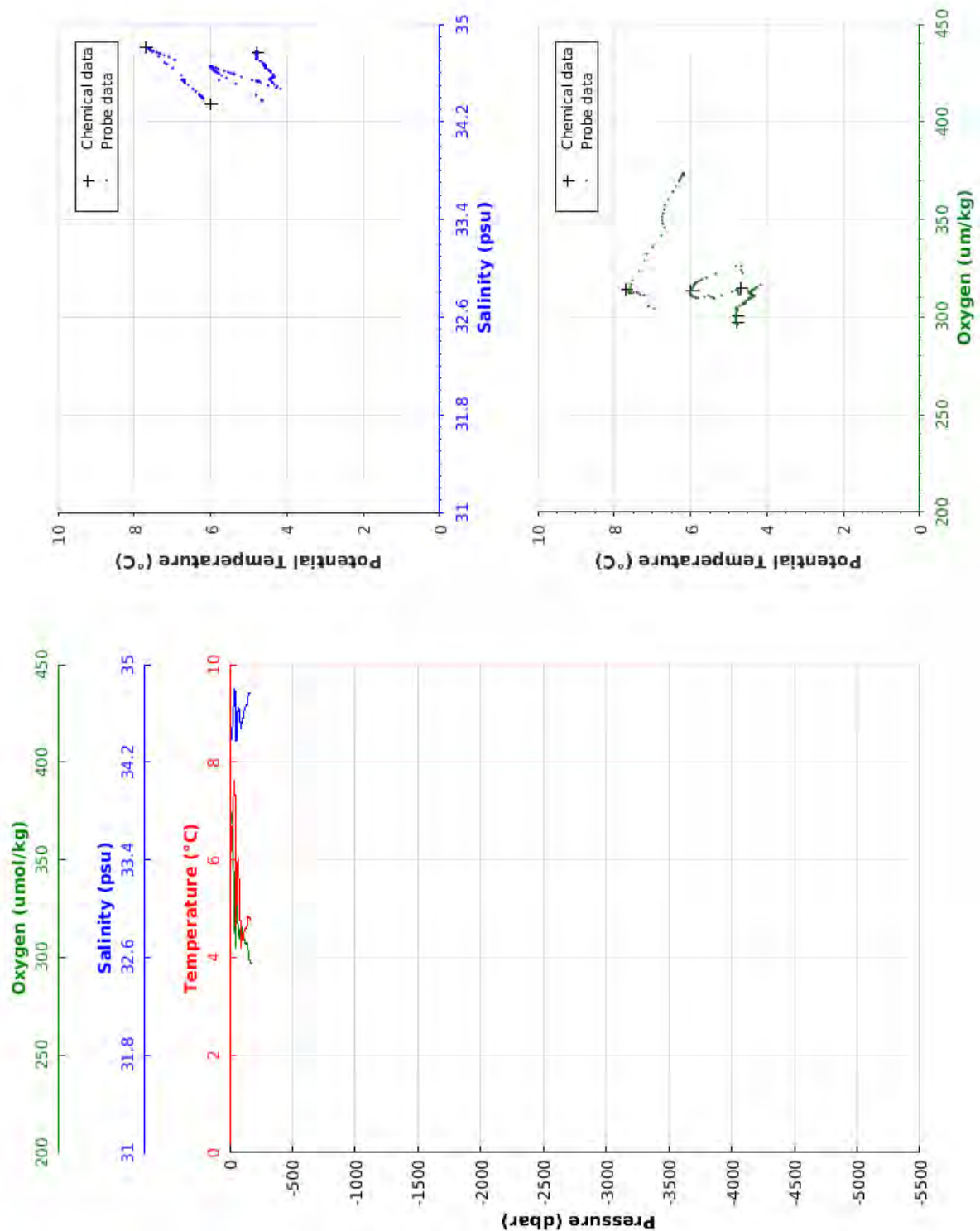
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.964	34.221	389.0	4.964
10.0	4.954	34.220	388.7	4.953
20.0	4.808	34.220	383.6	4.807
30.0	5.231	34.339	368.2	5.229
40.0	7.634	34.850	307.1	7.631
50.0	7.183	34.805	304.3	7.178
100.0	6.336	34.945	291.9	6.328
150.0	5.012	34.825	297.4	5.000
193.0	4.980	34.833	296.5	4.965



Station: 94

Cruise	: BOCATS 2016			
Station	: 95	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 184 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 51.57			
	W 042 42.08			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	6.217	34.399	372.6	6.217
10.0	6.193	34.392	373.5	6.192
20.0	6.670	34.518	357.2	6.668
30.0	7.149	34.673	332.3	7.146
40.0	7.502	34.782	312.6	7.498
50.0	4.672	34.376	324.0	4.668
100.0	4.423	34.557	311.8	4.415
150.0	4.827	34.763	299.6	4.816
176.0	4.790	34.767	296.5	4.776

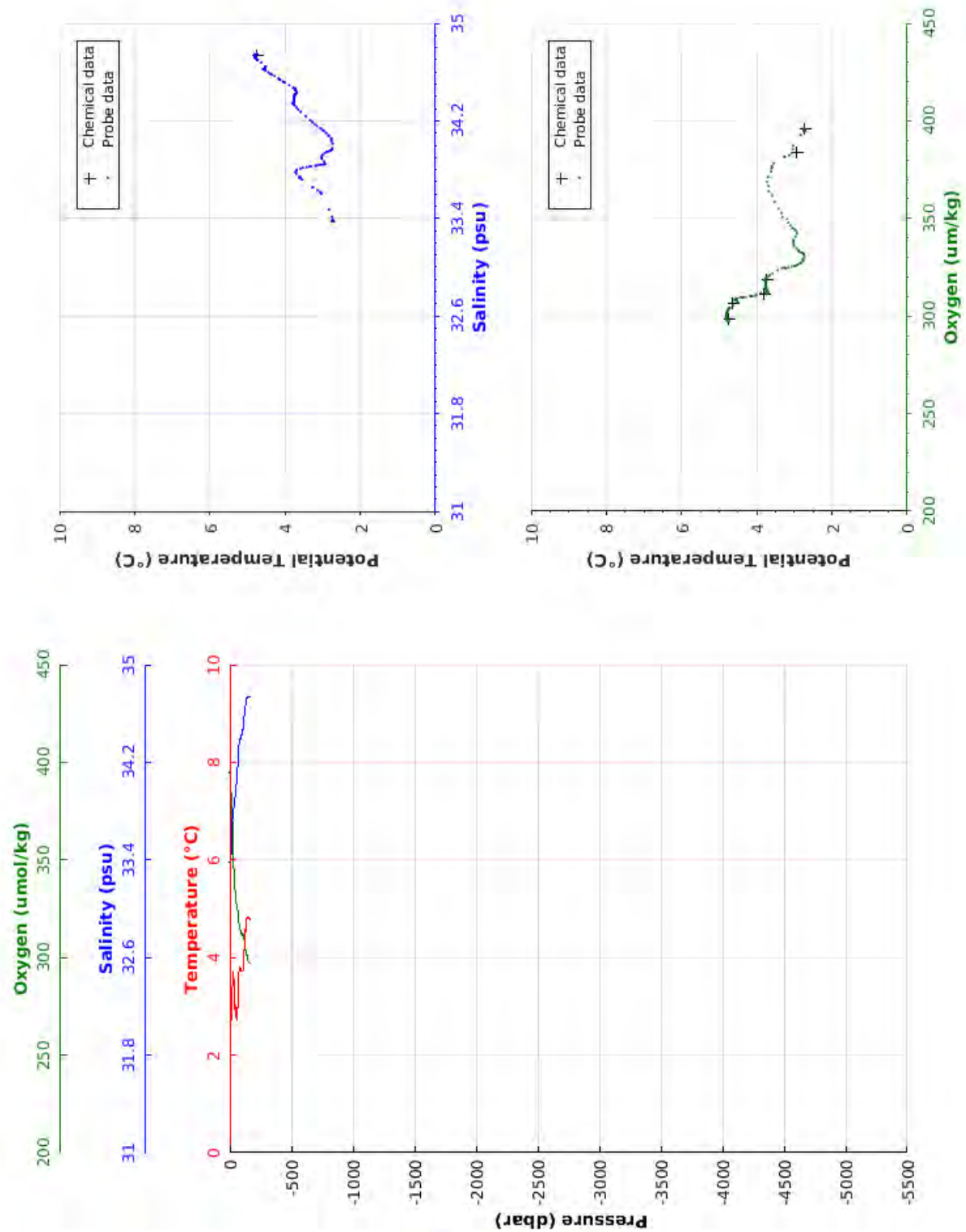


Station: 95



Cruise	: BOCATS 2016			
Station	: 96	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 184 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 52.54			
	W 042 47.73			

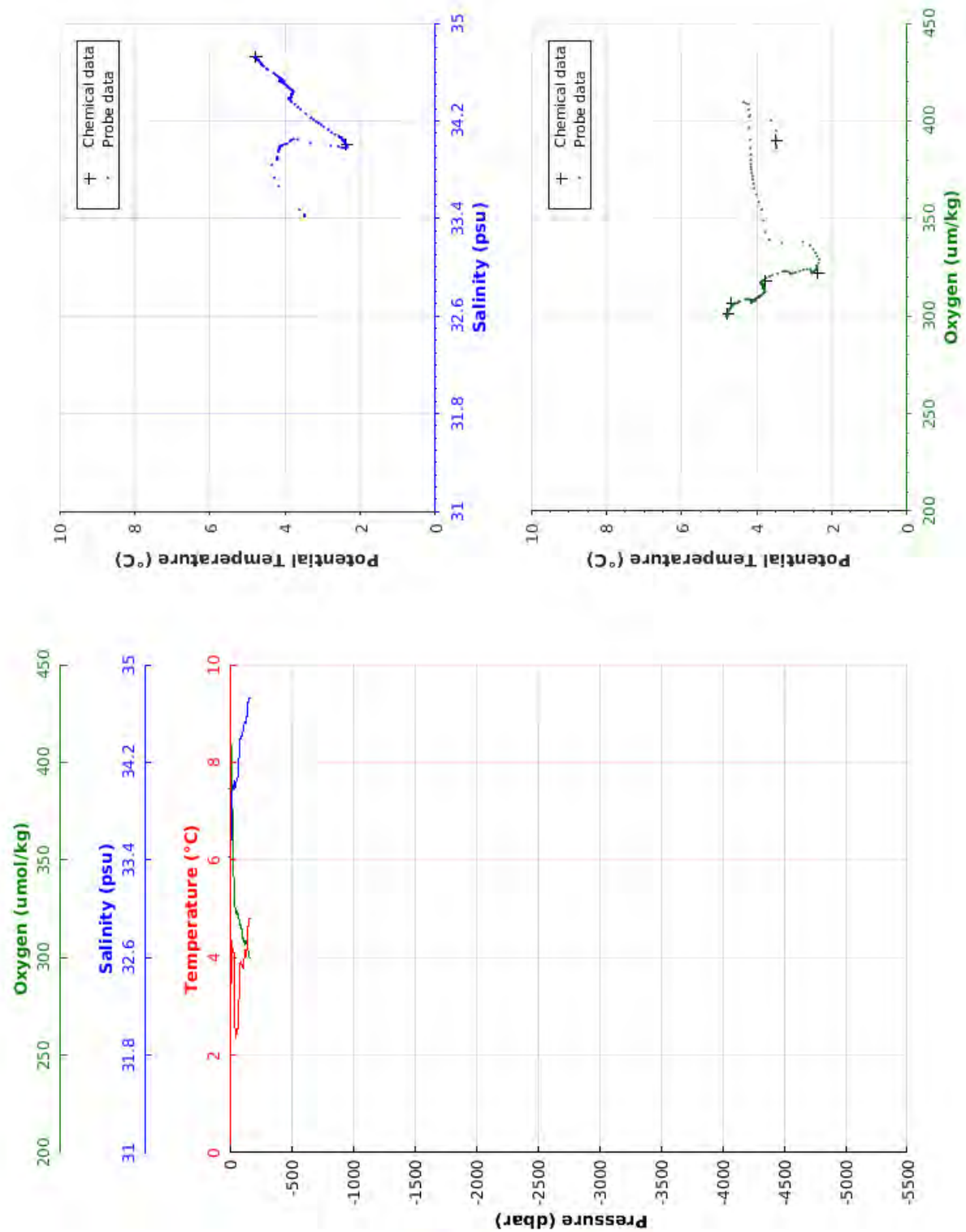
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	2.746	33.381	394.8	2.746
10.0	2.731	33.378	395.1	2.731
20.0	3.261	33.655	381.6	3.259
30.0	3.684	33.800	363.8	3.682
40.0	2.989	33.844	344.3	2.987
50.0	2.872	33.947	333.0	2.869
100.0	3.711	34.427	312.5	3.704
150.0	4.811	34.737	298.9	4.799
176.0	4.765	34.739	297.5	4.752



Station: 96

Cruise	: BOCATS 2016			
Station	: 97	Cast	: 1	
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 184 m	Organism	: CSIC/IIM VIGO	
Position	: N 59 53.47			
	W 042 54.35			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	3.483	33.421	386.6	3.483
10.0	3.483	33.425	387.2	3.483
20.0	4.204	33.890	402.1	4.203
30.0	4.118	33.993	371.8	4.116
40.0	3.332	34.018	337.3	3.330
50.0	2.403	34.022	325.0	2.401
100.0	3.845	34.418	314.4	3.838
150.0	4.648	34.671	305.6	4.636
176.0	4.810	34.725	300.3	4.797



Station: 97

Cruise	: BOCATS 2016		
Station	: 98	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 170 m	Organism	: CSIC/IIM VIGO
Position	: N 59 54.22 W 043 0.24		

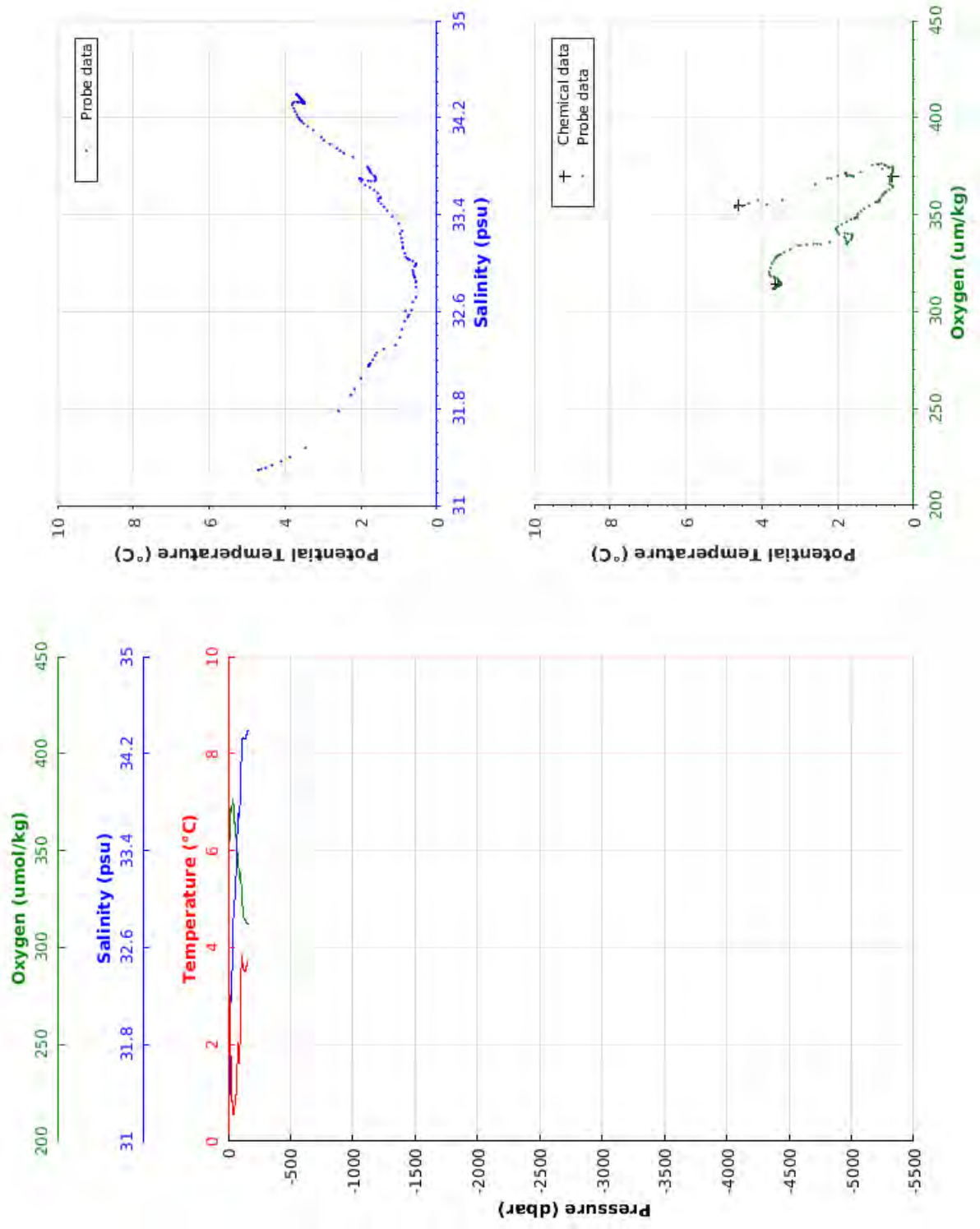
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.515	32.152	356.5	4.514
10.0	5.413	32.696	357.4	5.412
20.0	4.828	33.268	373.6	4.827
30.0	3.221	33.483	368.9	3.219
40.0	2.743	33.684	360.3	2.741
50.0	2.604	33.797	351.6	2.602
100.0	3.292	34.291	315.4	3.285
150.0	3.927	34.475	307.1	3.916
158.0	3.953	34.483	307.0	3.942





Cruise	: BOCATS 2016		
Station	: 99	Cast	: 1
Date	: 13/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 162 m	Organism	: CSIC/IIM VIGO
Position	: N 59 54.77 W 043 4.53		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	4.694	31.296	353.8	4.693
10.0	3.464	31.474	357.6	3.464
20.0	1.784	32.161	371.0	1.783
30.0	0.924	32.452	375.9	0.923
40.0	0.564	32.854	371.7	0.563
50.0	0.551	32.994	364.2	0.549
100.0	2.980	34.012	334.2	2.974
150.0	3.638	34.369	312.7	3.629
159.0	3.711	34.393	311.7	3.700

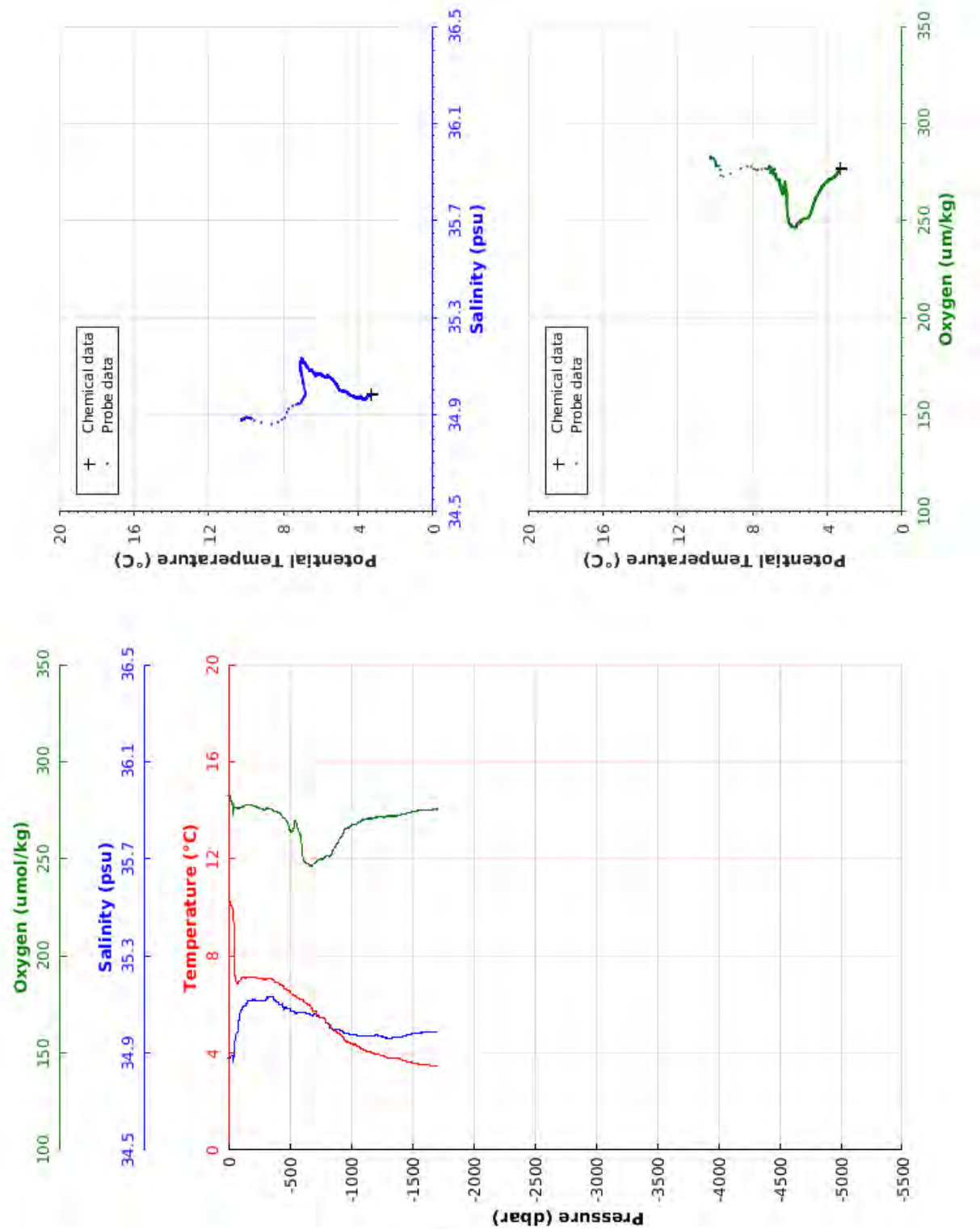


Station: 99



Cruise	: BOCATS 2016		
Station	: 100	Cast	: 1
Date	: 18/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1702 m	Organism	: CSIC/IIM VIGO
Position	: N 58 32.82 W 030 10.98		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.234	34.879	282.7	10.233
10.0	10.220	34.878	282.6	10.219
20.0	10.123	34.882	282.2	10.121
30.0	9.980	34.889	279.0	9.977
40.0	9.728	34.886	276.2	9.724
50.0	7.511	34.937	276.4	7.506
100.0	7.040	35.065	276.1	7.031
150.0	7.118	35.104	277.5	7.104
200.0	7.131	35.118	277.2	7.112
250.0	7.062	35.114	276.3	7.038
300.0	7.045	35.115	275.0	7.016
350.0	7.053	35.130	275.6	7.019
400.0	6.898	35.111	274.4	6.861
450.0	6.691	35.088	271.5	6.649
500.0	6.517	35.083	265.9	6.471
550.0	6.317	35.062	269.8	6.267
600.0	6.221	35.069	258.5	6.167
650.0	5.994	35.062	247.3	5.936
700.0	5.715	35.059	247.4	5.654
750.0	5.470	35.046	249.7	5.405
800.0	5.257	35.027	251.2	5.190
850.0	5.013	35.000	252.7	4.943
900.0	4.803	34.996	258.7	4.730
950.0	4.508	34.980	264.6	4.432
1000.0	4.408	34.978	266.8	4.328
1050.0	4.326	34.975	267.9	4.243
1100.0	4.127	34.970	270.0	4.041
1150.0	4.049	34.971	270.7	3.959
1200.0	3.975	34.974	271.3	3.882
1250.0	3.900	34.969	271.5	3.804
1300.0	3.790	34.962	272.0	3.690
1350.0	3.777	34.963	272.0	3.673
1400.0	3.764	34.964	272.1	3.656
1450.0	3.666	34.973	273.2	3.554
1500.0	3.590	34.979	274.0	3.475
1550.0	3.548	34.983	274.8	3.428
1600.0	3.515	34.984	275.0	3.391
1650.0	3.490	34.985	275.2	3.362
1700.0	3.475	34.985	275.3	3.343
1715.0	3.475	34.985	275.6	3.342



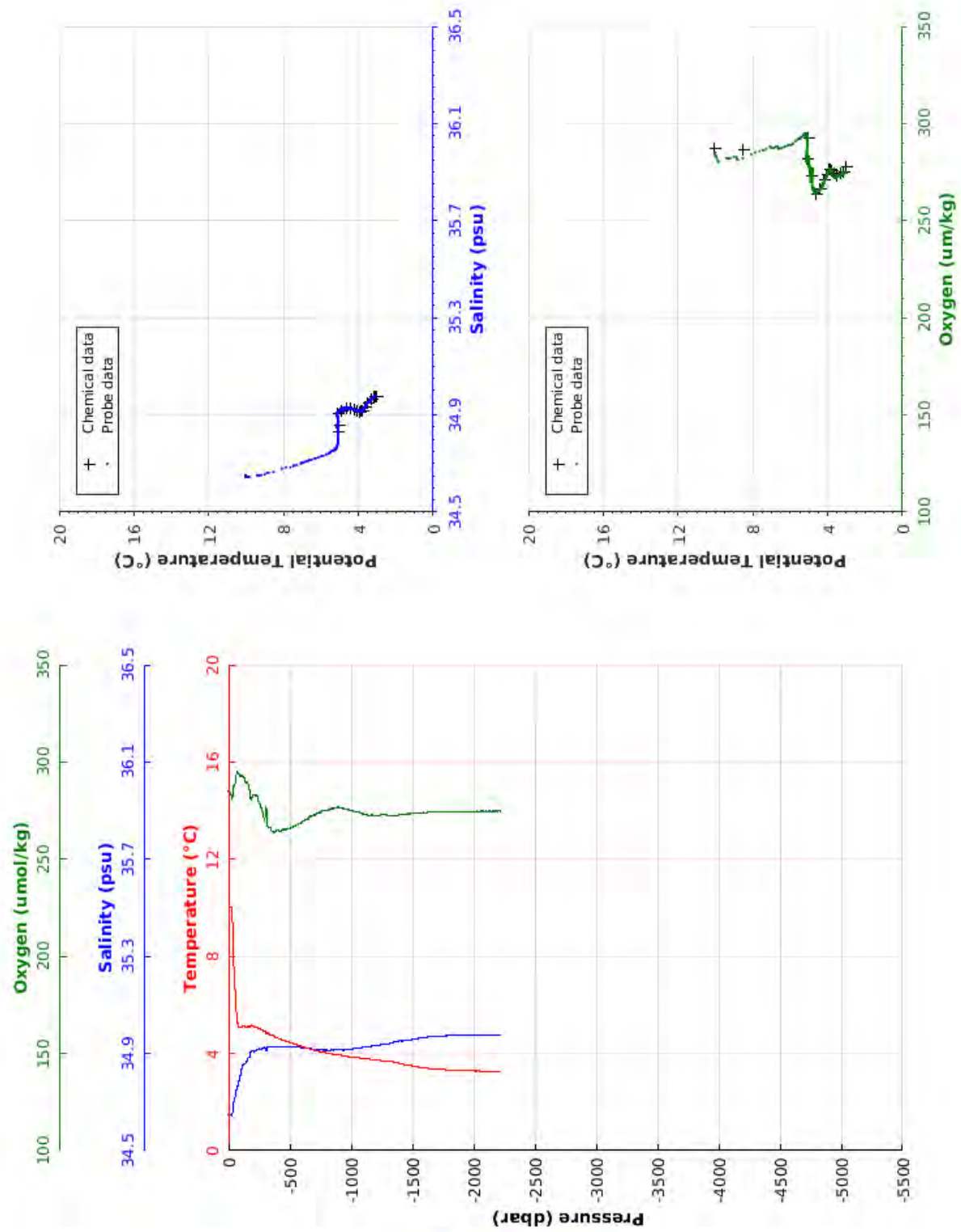
Station: 100

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| Cruise      : BOCATS 2016
|
| Station     : 101           Cast      : 1
|
| Date        : 21/07/2016    Ship       : B/O Sarmiento de Gamboa
|
| Depth       : 2210 m        Organism  : CSIC/IIM VIGO
|
| Position    : N 55 20.94
|              W 034 48.82
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.051	34.649	284.8	10.051
10.0	10.051	34.649	284.7	10.049
20.0	10.032	34.647	284.1	10.029
30.0	9.843	34.644	280.4	9.840
40.0	8.102	34.679	284.2	8.098
50.0	6.887	34.706	287.5	6.882
100.0	5.072	34.811	292.9	5.065
150.0	5.088	34.869	289.6	5.076
200.0	5.150	34.910	281.9	5.134
250.0	5.051	34.918	280.1	5.031
300.0	4.920	34.925	270.1	4.896
350.0	4.767	34.927	265.6	4.740
400.0	4.635	34.927	265.1	4.605
450.0	4.531	34.929	265.2	4.496
500.0	4.454	34.928	265.7	4.416
550.0	4.376	34.925	267.2	4.334
600.0	4.288	34.924	269.0	4.243
650.0	4.216	34.922	270.6	4.167
700.0	4.145	34.919	272.5	4.092
750.0	4.078	34.915	274.1	4.022
800.0	4.021	34.914	275.4	3.961
850.0	3.977	34.915	276.2	3.913
900.0	3.944	34.916	276.7	3.876
950.0	3.884	34.914	275.9	3.812
1000.0	3.864	34.918	275.1	3.789
1050.0	3.823	34.923	274.4	3.744
1100.0	3.782	34.925	273.3	3.699
1150.0	3.766	34.929	272.6	3.679
1200.0	3.740	34.932	272.3	3.649
1250.0	3.693	34.937	272.9	3.598
1300.0	3.678	34.939	272.6	3.579
1350.0	3.660	34.947	272.3	3.557
1400.0	3.589	34.952	272.9	3.483
1450.0	3.544	34.954	273.2	3.433
1500.0	3.492	34.957	273.5	3.377
1550.0	3.441	34.963	273.7	3.322
1600.0	3.412	34.967	274.0	3.290
1650.0	3.378	34.969	274.2	3.252
1700.0	3.349	34.972	274.2	3.218
1750.0	3.342	34.972	274.2	3.207
1800.0	3.312	34.974	274.5	3.173
1850.0	3.306	34.974	274.5	3.162
1900.0	3.290	34.975	274.6	3.142
1950.0	3.284	34.976	274.5	3.132
2000.0	3.280	34.976	274.6	3.123
2050.0	3.281	34.976	274.7	3.119
2100.0	3.262	34.977	274.6	3.096
2150.0	3.260	34.977	274.7	3.089
2200.0	3.250	34.977	274.7	3.075
2232.0	3.231	34.978	275.1	3.053

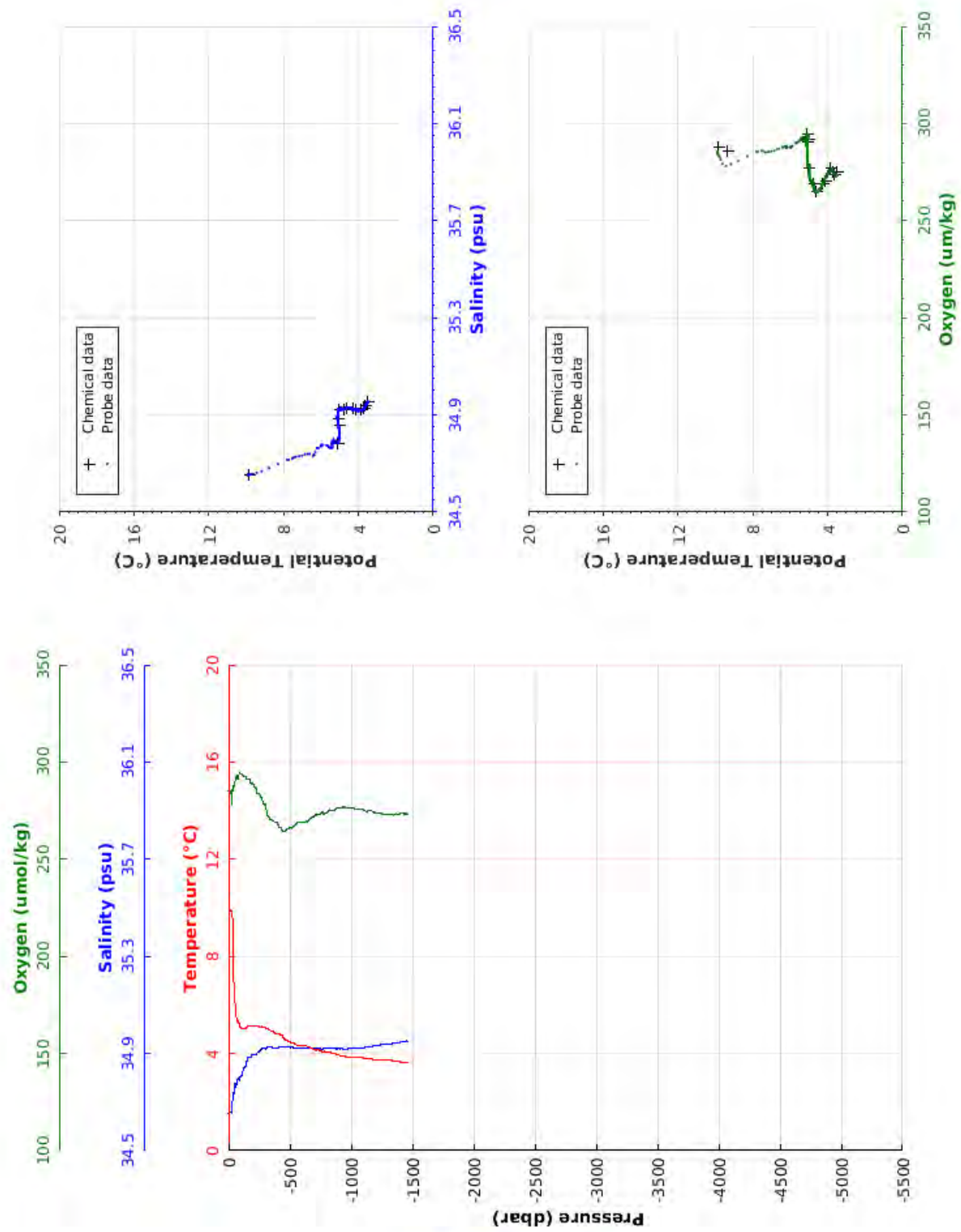


Station: 101



Cruise	: BOCATS 2016		
Station	: 102	Cast	: 1
Date	: 21/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1459 m	Organism	: CSIC/IIM VIGO
Position	: N 55 40.28		
	W 034 34.25		

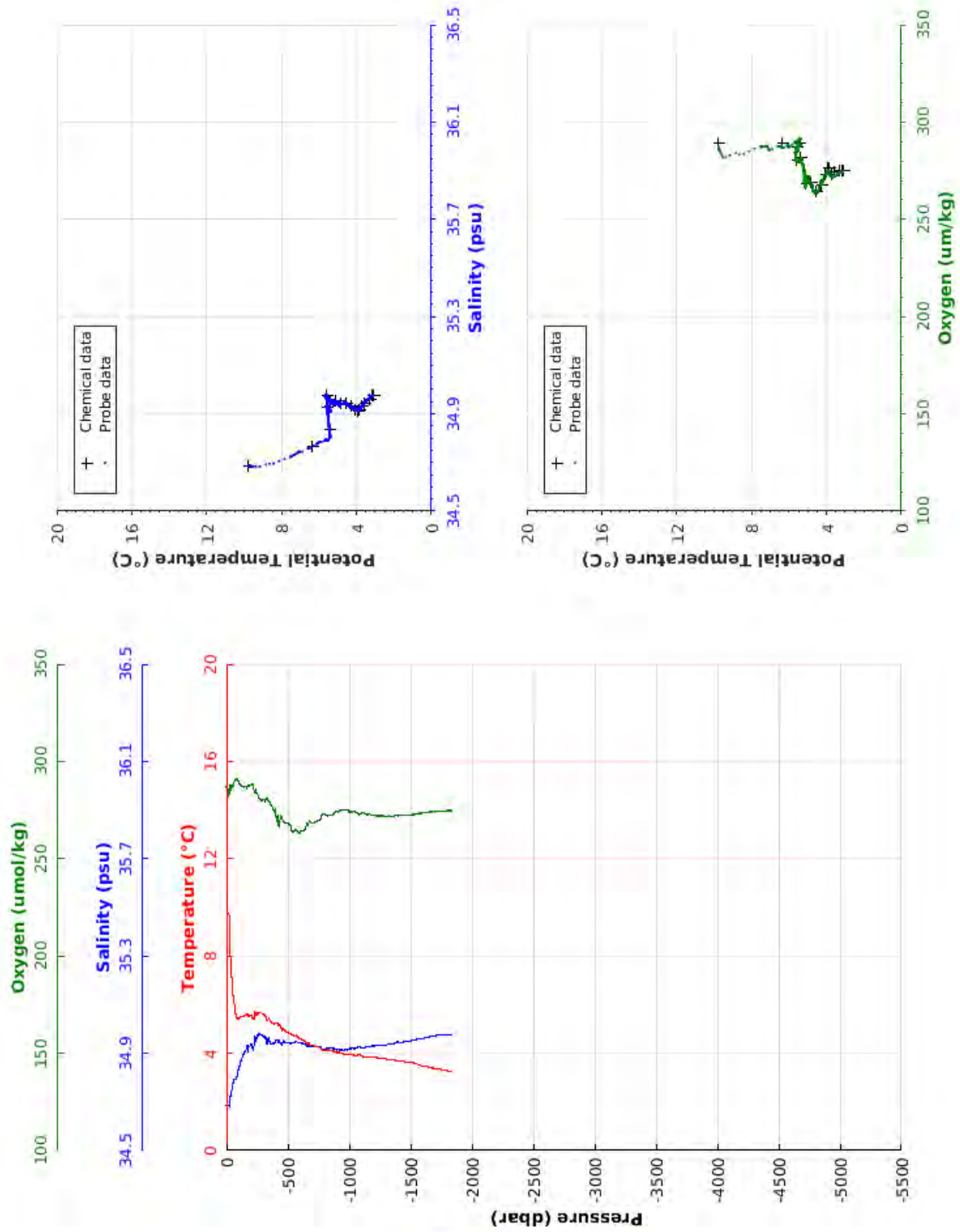
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.900	34.654	284.9	9.900
10.0	9.903	34.656	285.0	9.902
20.0	9.888	34.657	285.2	9.886
30.0	9.724	34.656	281.5	9.721
40.0	7.342	34.728	285.2	7.339
50.0	6.220	34.763	288.2	6.216
100.0	5.060	34.807	293.8	5.053
150.0	5.103	34.866	292.1	5.091
200.0	5.127	34.894	288.8	5.111
250.0	5.107	34.906	283.9	5.087
300.0	5.044	34.921	278.1	5.020
350.0	4.944	34.928	270.5	4.916
400.0	4.808	34.924	269.3	4.776
450.0	4.653	34.928	264.6	4.618
500.0	4.480	34.926	265.9	4.442
550.0	4.367	34.922	267.9	4.325
600.0	4.324	34.922	268.8	4.278
650.0	4.268	34.924	269.7	4.219
700.0	4.166	34.920	271.9	4.113
750.0	4.116	34.920	273.1	4.060
800.0	4.073	34.922	273.7	4.013
850.0	4.017	34.920	275.0	3.953
900.0	3.930	34.920	276.2	3.862
950.0	3.876	34.918	276.7	3.805
1000.0	3.848	34.920	276.4	3.773
1050.0	3.831	34.922	275.8	3.752
1100.0	3.820	34.924	275.8	3.737
1150.0	3.785	34.927	274.9	3.697
1200.0	3.740	34.933	274.2	3.649
1250.0	3.735	34.936	273.5	3.640
1300.0	3.726	34.938	273.2	3.627
1350.0	3.700	34.942	272.8	3.596
1400.0	3.656	34.946	273.3	3.548
1450.0	3.616	34.952	273.4	3.505
1466.0	3.598	34.954	273.6	3.486



Station: 102

Cruise	: BOCATS 2016		
Station	: 103	Cast	: 1
Date	: 21/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1833 m	Organism	: CSIC/IIM VIGO
Position	: N 55 54.45		
	W 034 23.64		

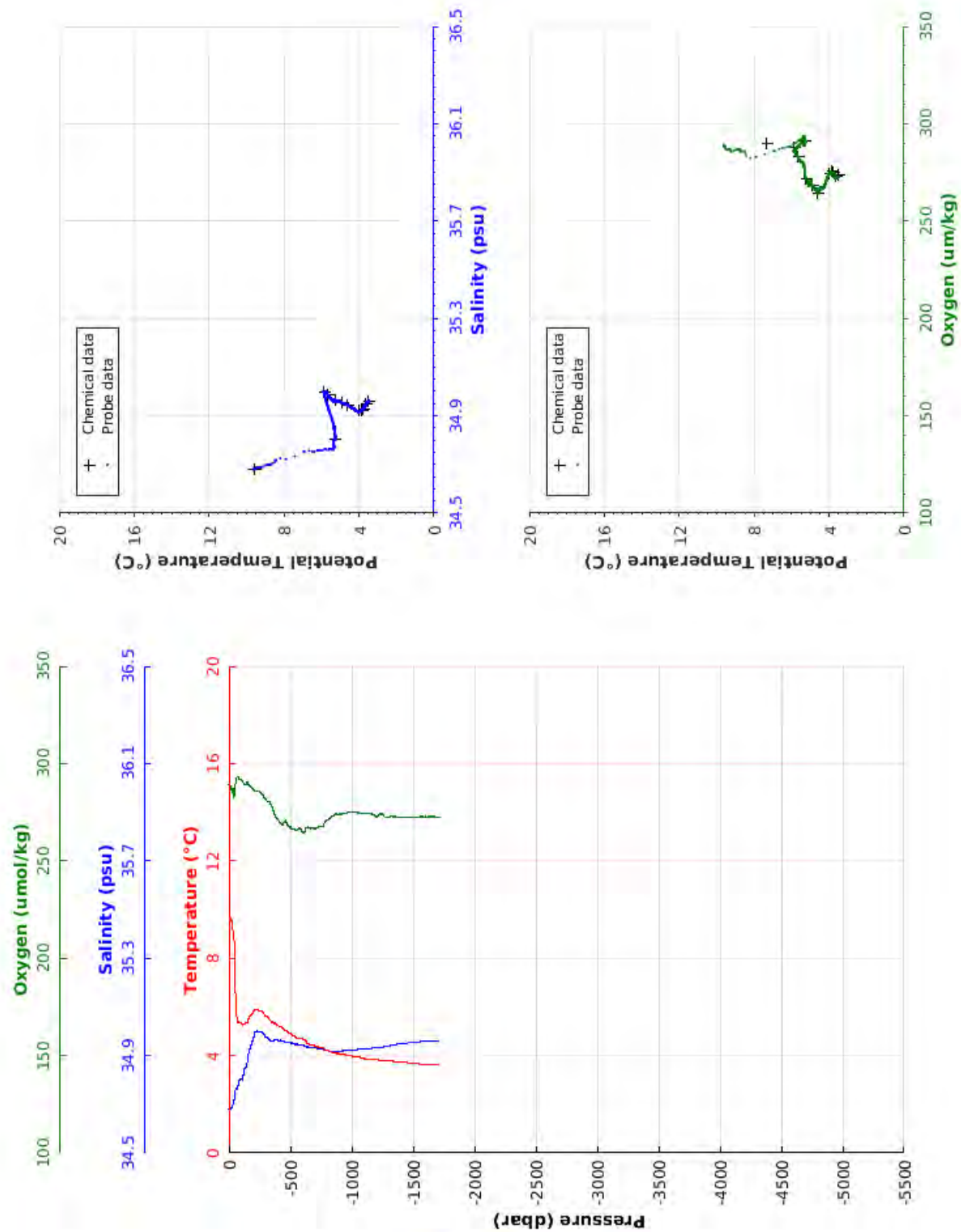
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.753	34.686	287.1	9.752
10.0	9.749	34.686	286.5	9.748
20.0	9.694	34.686	285.3	9.692
30.0	8.428	34.696	283.7	8.425
40.0	7.201	34.738	287.8	7.197
50.0	6.435	34.762	287.7	6.431
100.0	5.427	34.831	290.2	5.419
150.0	5.564	34.904	286.8	5.551
200.0	5.579	34.935	287.9	5.562
250.0	5.660	34.973	284.0	5.639
300.0	5.595	34.972	280.0	5.570
350.0	5.410	34.957	279.4	5.382
400.0	5.248	34.951	274.9	5.215
450.0	5.024	34.942	272.0	4.988
500.0	4.867	34.942	268.4	4.827
550.0	4.732	34.944	263.8	4.688
600.0	4.599	34.944	263.3	4.552
650.0	4.446	34.933	265.4	4.396
700.0	4.328	34.930	268.4	4.274
750.0	4.251	34.928	269.5	4.193
800.0	4.121	34.917	273.0	4.061
850.0	4.116	34.922	272.6	4.051
900.0	4.033	34.914	274.5	3.964
950.0	3.979	34.913	275.2	3.907
1000.0	3.963	34.919	274.3	3.887
1050.0	3.901	34.916	274.6	3.821
1100.0	3.894	34.923	273.3	3.810
1150.0	3.860	34.926	272.8	3.772
1200.0	3.842	34.930	272.2	3.750
1250.0	3.793	34.933	272.1	3.698
1300.0	3.764	34.935	271.8	3.665
1350.0	3.730	34.939	272.0	3.626
1400.0	3.704	34.947	272.0	3.596
1450.0	3.655	34.946	272.4	3.543
1500.0	3.625	34.951	272.6	3.509
1550.0	3.562	34.957	272.8	3.443
1600.0	3.469	34.961	273.5	3.346
1650.0	3.425	34.965	273.8	3.299
1700.0	3.373	34.971	274.0	3.243
1750.0	3.333	34.974	274.4	3.198
1800.0	3.286	34.976	274.7	3.148
1847.0	3.266	34.977	274.8	3.123



Station: 103

Cruise	: BOCATS 2016		
Station	: 104	Cast	: 1
Date	: 21/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1709 m	Organism	: CSIC/IIM VIGO
Position	: N 56 23.93 W 034 1.26		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.628	34.681	288.9	9.628
10.0	9.628	34.681	289.0	9.626
20.0	9.576	34.682	288.2	9.574
30.0	9.251	34.689	285.7	9.247
40.0	8.803	34.699	286.8	8.799
50.0	7.436	34.733	284.2	7.431
100.0	5.329	34.804	291.8	5.321
150.0	5.371	34.864	289.9	5.358
200.0	5.793	34.966	286.9	5.776
250.0	5.851	34.999	285.6	5.830
300.0	5.630	34.978	281.7	5.605
350.0	5.367	34.957	278.8	5.339
400.0	5.242	34.962	271.4	5.209
450.0	5.083	34.959	269.1	5.047
500.0	4.901	34.953	267.4	4.861
550.0	4.734	34.947	265.8	4.691
600.0	4.675	34.946	265.0	4.628
650.0	4.470	34.934	267.3	4.419
700.0	4.403	34.932	266.7	4.349
750.0	4.329	34.929	267.8	4.271
800.0	4.222	34.922	270.5	4.160
850.0	4.128	34.918	273.0	4.063
900.0	4.079	34.918	273.8	4.011
950.0	4.033	34.920	274.1	3.960
1000.0	3.986	34.920	275.2	3.910
1050.0	3.934	34.924	274.8	3.854
1100.0	3.874	34.926	274.3	3.790
1150.0	3.834	34.928	274.5	3.746
1200.0	3.833	34.935	272.8	3.741
1250.0	3.801	34.933	273.9	3.705
1300.0	3.776	34.938	272.2	3.676
1350.0	3.757	34.945	272.6	3.653
1400.0	3.733	34.949	272.2	3.625
1450.0	3.706	34.950	272.3	3.594
1500.0	3.677	34.954	272.4	3.560
1550.0	3.654	34.956	272.6	3.533
1600.0	3.642	34.958	272.6	3.517
1650.0	3.639	34.959	272.6	3.509
1700.0	3.633	34.960	272.5	3.499
1722.0	3.630	34.961	272.8	3.494

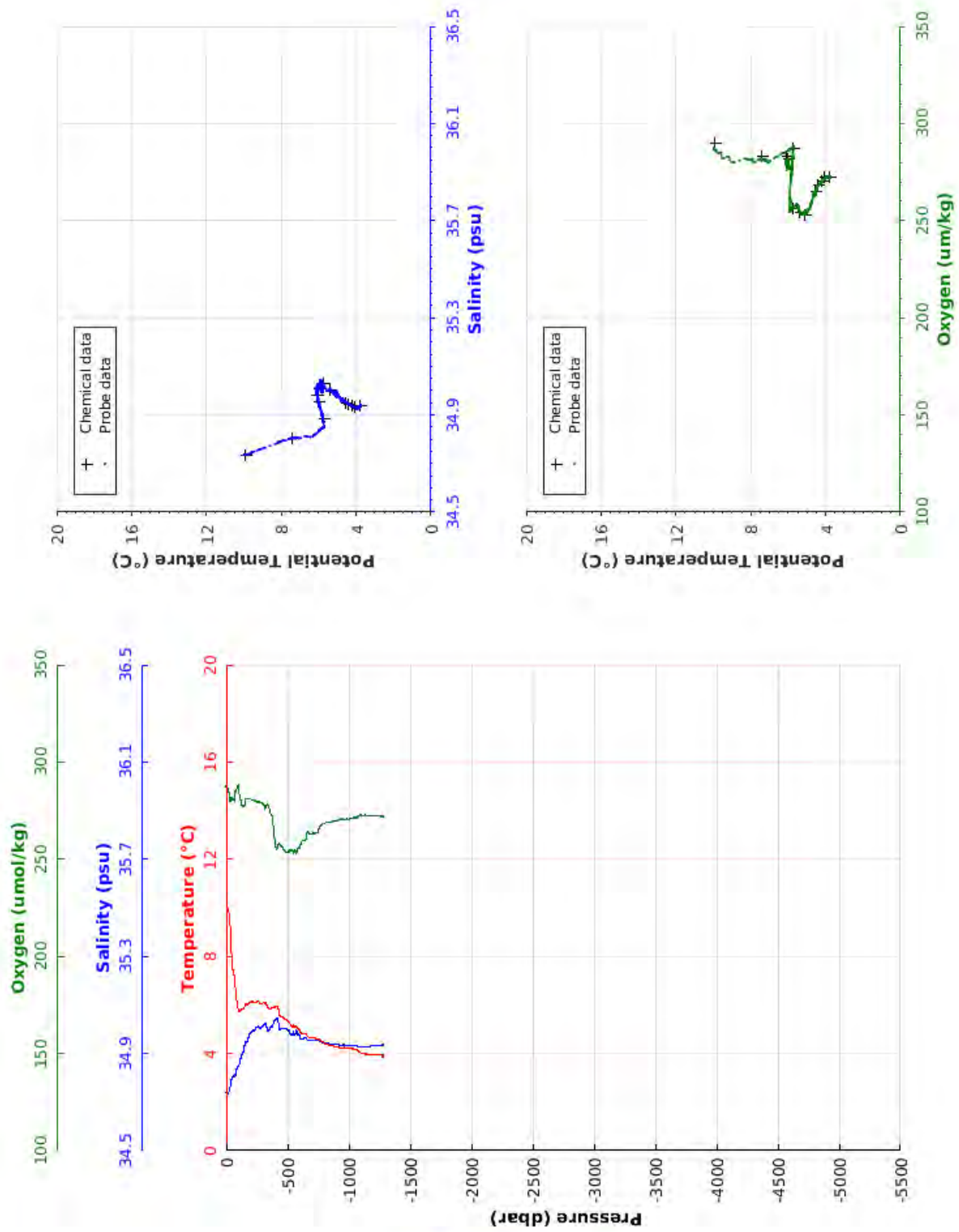


Station: 104



Cruise	: BOCATS 2016		
Station	: 105	Cast	: 1
Date	: 21/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1278 m	Organism	: CSIC/IIM VIGO
Position	: N 56 38.12 W 033 42.79		

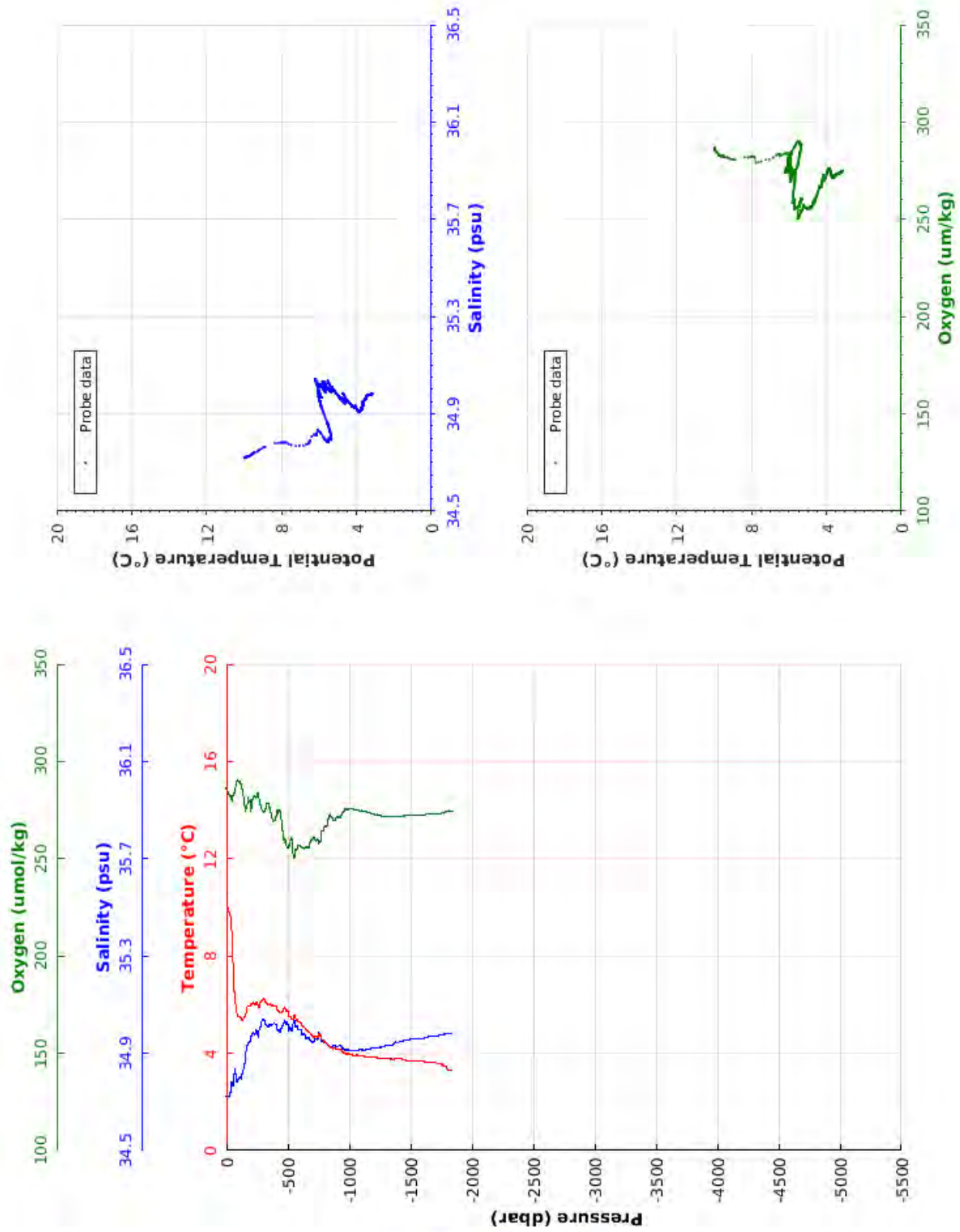
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.953	34.738	287.6	9.952
10.0	9.951	34.738	287.5	9.949
20.0	9.851	34.737	286.4	9.849
30.0	9.447	34.749	282.2	9.443
40.0	8.220	34.785	281.8	8.216
50.0	7.619	34.800	281.2	7.614
100.0	5.784	34.848	287.5	5.776
150.0	5.954	34.931	276.9	5.941
200.0	6.108	34.982	281.3	6.091
250.0	6.137	35.007	279.7	6.115
300.0	6.078	35.014	278.6	6.052
350.0	5.841	34.994	277.3	5.811
400.0	5.916	35.033	261.1	5.882
450.0	5.508	35.000	257.0	5.470
500.0	5.329	34.997	253.3	5.288
550.0	5.131	34.983	254.2	5.086
600.0	4.959	34.975	255.9	4.910
650.0	4.798	34.964	259.9	4.746
700.0	4.650	34.955	263.0	4.595
750.0	4.614	34.954	263.6	4.555
800.0	4.432	34.943	268.3	4.370
850.0	4.336	34.940	269.2	4.270
900.0	4.275	34.937	269.9	4.205
950.0	4.210	34.933	270.7	4.136
1000.0	4.237	34.935	270.4	4.159
1050.0	4.169	34.932	271.4	4.087
1100.0	4.023	34.927	272.7	3.938
1150.0	3.967	34.930	272.4	3.878
1200.0	3.956	34.930	272.4	3.863
1250.0	3.932	34.932	272.4	3.835
1286.0	3.847	34.940	272.6	3.748



Station: 105

Cruise	: BOCATS 2016		
Station	: 106	Cast	: 1
Date	: 21/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1831 m	Organism	: CSIC/IIM VIGO
Position	: N 56 42.12		
	W 033 37.57		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.960	34.721	286.6	9.959
10.0	9.959	34.721	285.9	9.957
20.0	9.828	34.724	284.0	9.826
30.0	9.641	34.732	282.7	9.638
40.0	9.240	34.750	281.6	9.236
50.0	7.859	34.782	282.2	7.854
100.0	5.490	34.792	290.2	5.482
150.0	5.535	34.854	278.8	5.522
200.0	5.979	34.955	278.9	5.962
250.0	6.043	34.989	281.4	6.021
300.0	6.223	35.040	274.3	6.197
350.0	5.988	35.012	277.8	5.958
400.0	5.947	35.021	269.9	5.912
450.0	5.721	35.002	270.7	5.683
500.0	5.734	35.028	255.5	5.691
550.0	5.573	35.034	251.7	5.527
600.0	5.270	34.999	256.9	5.220
650.0	4.938	34.964	256.0	4.886
700.0	4.683	34.944	260.0	4.627
750.0	4.672	34.963	260.1	4.613
800.0	4.458	34.945	266.0	4.396
850.0	4.242	34.929	272.6	4.176
900.0	4.154	34.928	271.0	4.085
950.0	4.053	34.921	273.6	3.980
1000.0	3.945	34.910	276.0	3.869
1050.0	3.923	34.912	275.3	3.843
1100.0	3.898	34.915	274.5	3.814
1150.0	3.841	34.915	274.1	3.754
1200.0	3.832	34.920	273.0	3.740
1250.0	3.799	34.925	272.4	3.703
1300.0	3.808	34.934	271.5	3.708
1350.0	3.755	34.933	271.8	3.651
1400.0	3.778	34.946	271.5	3.669
1450.0	3.733	34.952	271.9	3.620
1500.0	3.671	34.957	272.4	3.555
1550.0	3.669	34.958	272.4	3.548
1600.0	3.661	34.959	272.5	3.536
1650.0	3.629	34.968	272.9	3.500
1700.0	3.608	34.968	272.9	3.474
1750.0	3.545	34.976	273.5	3.408
1800.0	3.356	34.981	274.7	3.217
1848.0	3.329	34.982	274.8	3.185



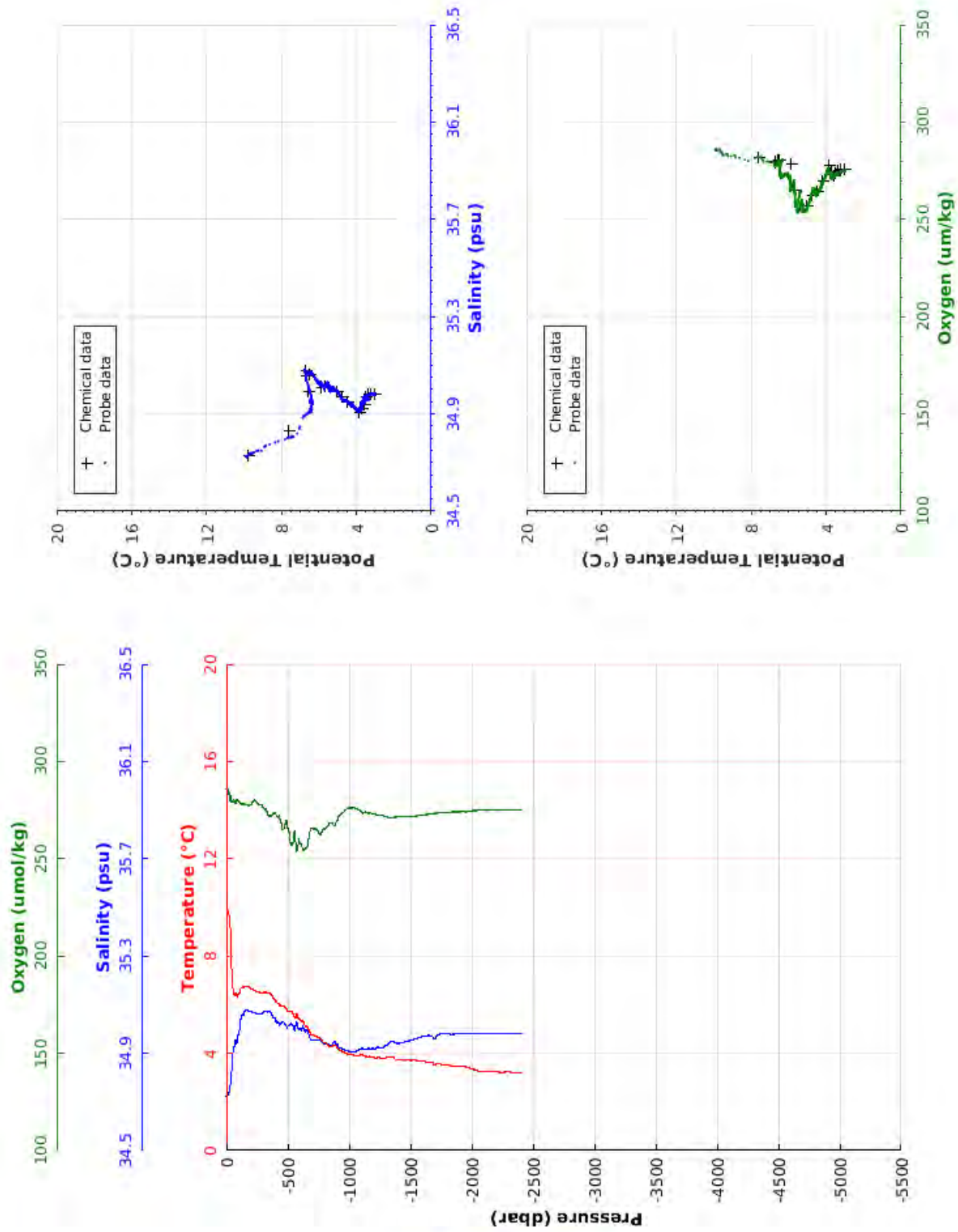
Station: 106

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| Cruise      : BOCATS 2016
| Station     : 107           Cast      : 1
| Date        : 21/07/2016    Ship       : B/O Sarmiento de Gamboa
| Depth       : 2423 m        Organism  : CSIC/IIM VIGO
| Position    : N 56 43.49
|              W 033 35.64
|
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PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.874	34.724	285.8	9.874
10.0	9.869	34.724	285.4	9.868
20.0	9.687	34.737	285.5	9.685
30.0	9.282	34.749	283.6	9.279
40.0	7.690	34.802	282.0	7.686
50.0	6.813	34.891	279.5	6.809
100.0	6.431	34.975	279.9	6.422
150.0	6.760	35.073	278.1	6.746
200.0	6.669	35.073	277.7	6.650
250.0	6.533	35.061	279.4	6.510
300.0	6.490	35.066	277.1	6.463
350.0	6.468	35.073	272.1	6.437
400.0	6.167	35.038	273.6	6.131
450.0	5.948	35.022	268.6	5.909
500.0	5.752	35.007	268.3	5.708
550.0	5.582	35.011	258.4	5.535
600.0	5.358	34.997	259.5	5.308
650.0	5.110	34.996	255.6	5.056
700.0	4.745	34.956	265.8	4.689
750.0	4.634	34.955	264.5	4.575
800.0	4.414	34.939	265.6	4.351
850.0	4.283	34.931	268.6	4.217
900.0	4.248	34.936	268.9	4.178
950.0	4.066	34.918	273.4	3.993
1000.0	3.954	34.909	276.0	3.879
1050.0	3.920	34.908	276.1	3.840
1100.0	3.935	34.919	274.3	3.851
1150.0	3.859	34.915	273.9	3.771
1200.0	3.838	34.920	273.0	3.746
1250.0	3.801	34.921	272.5	3.705
1300.0	3.808	34.930	271.7	3.708
1350.0	3.823	34.948	271.2	3.718
1400.0	3.729	34.941	271.7	3.621
1450.0	3.704	34.943	271.7	3.591
1500.0	3.709	34.952	271.7	3.592
1550.0	3.708	34.961	271.9	3.587
1600.0	3.669	34.969	272.5	3.544
1650.0	3.649	34.973	272.7	3.519
1700.0	3.509	34.959	273.4	3.377
1750.0	3.561	34.980	273.6	3.423
1800.0	3.505	34.979	273.9	3.363
1850.0	3.459	34.978	274.1	3.313
1900.0	3.447	34.979	274.2	3.297
1950.0	3.443	34.979	274.0	3.289
2000.0	3.353	34.982	274.6	3.195
2050.0	3.282	34.983	274.9	3.121
2100.0	3.254	34.982	275.0	3.088
2150.0	3.245	34.982	275.0	3.075
2200.0	3.237	34.981	275.0	3.062
2250.0	3.225	34.981	274.9	3.045
2300.0	3.227	34.981	274.9	3.043
2350.0	3.207	34.981	275.0	3.018
2400.0	3.205	34.981	275.1	3.011
2423.0	3.203	34.981	275.3	3.007



Station: 107

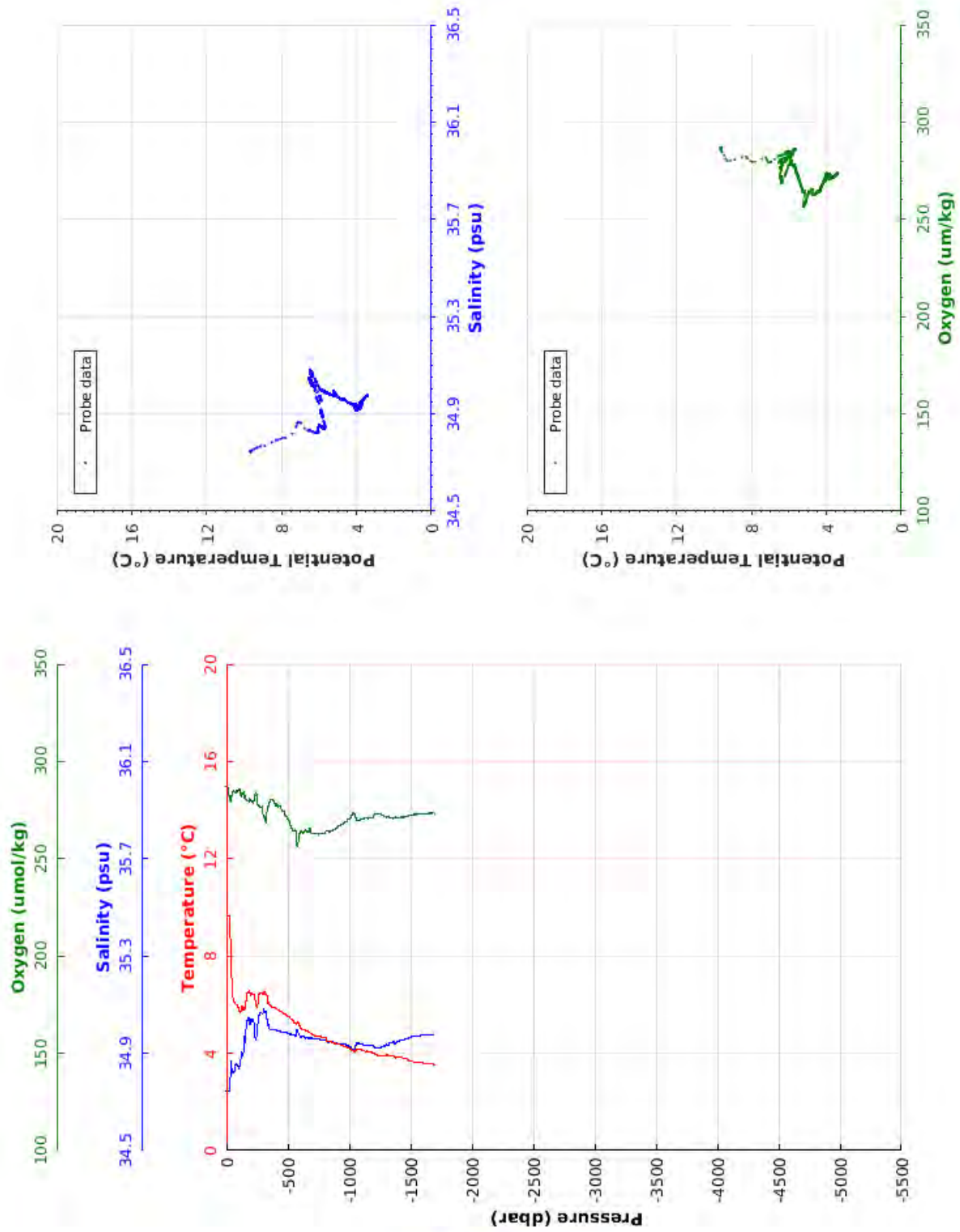


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| Cruise      : BOCATS 2016
|
| Station     : 108           Cast      : 1
|
| Date        : 22/07/2016    Ship       : B/O Sarmiento de Gamboa
|
| Depth       : 1691 m        Organism  : CSIC/IIM VIGO
|
| Position    : N 56 46.87
|              W 033 31.47
|
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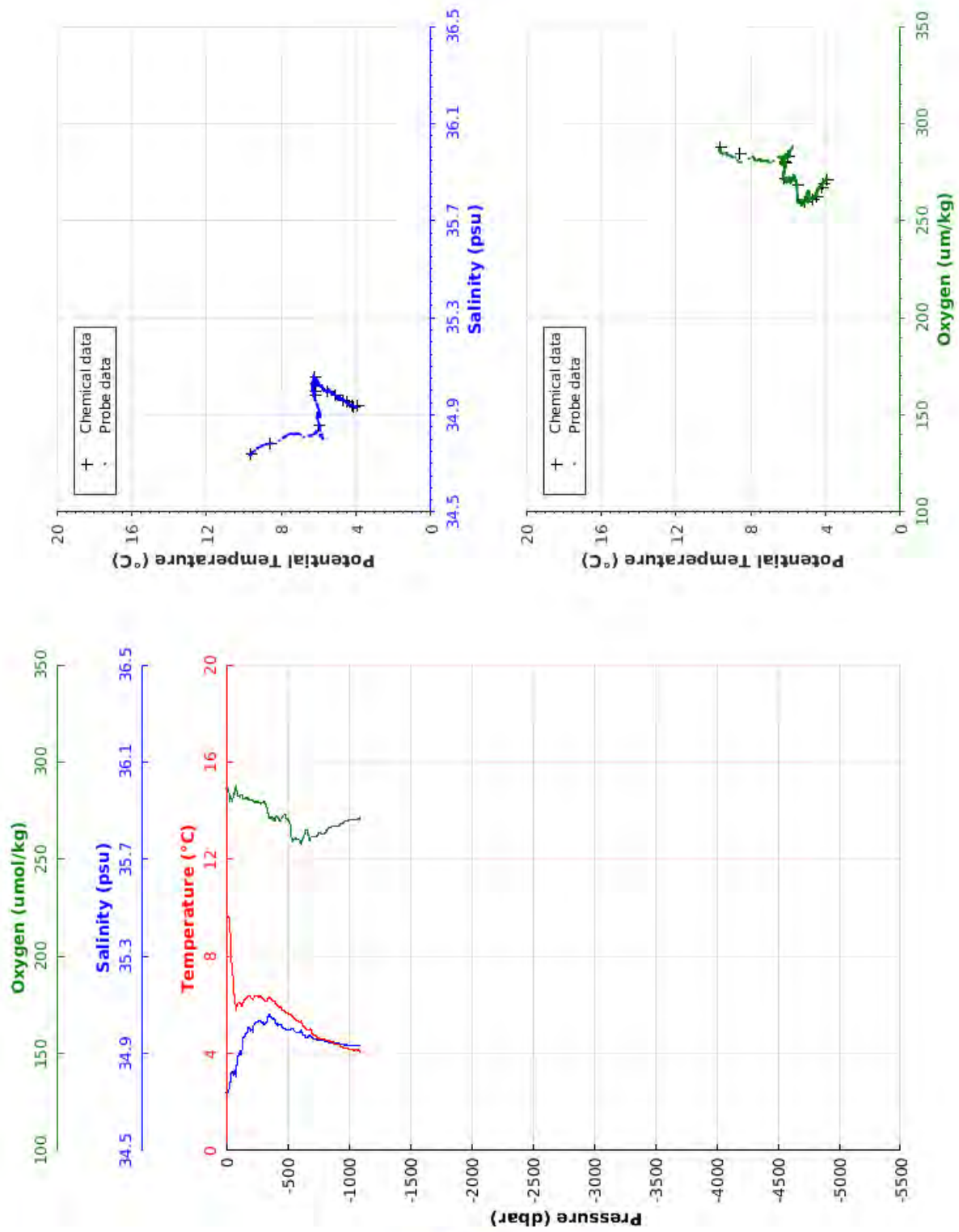
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.653	34.744	286.9	9.653
10.0	9.653	34.744	286.6	9.652
20.0	9.648	34.746	286.6	9.646
30.0	9.127	34.767	280.2	9.124
40.0	7.209	34.851	281.0	7.206
50.0	6.439	34.830	282.9	6.434
100.0	5.854	34.845	284.7	5.846
150.0	5.895	34.917	284.2	5.882
200.0	6.448	35.033	280.7	6.430
250.0	5.972	34.971	282.5	5.950
300.0	6.429	35.062	276.1	6.401
350.0	6.018	35.009	278.0	5.987
400.0	5.860	34.998	278.2	5.826
450.0	5.697	34.988	276.1	5.659
500.0	5.510	34.983	270.6	5.468
550.0	5.285	34.976	264.1	5.239
600.0	5.055	34.970	262.2	5.006
650.0	4.913	34.962	264.5	4.861
700.0	4.771	34.961	262.8	4.715
750.0	4.702	34.958	262.8	4.642
800.0	4.654	34.956	263.0	4.590
850.0	4.470	34.947	263.9	4.403
900.0	4.384	34.941	265.8	4.313
950.0	4.289	34.938	267.9	4.215
1000.0	4.198	34.929	270.3	4.120
1050.0	4.114	34.924	273.0	4.033
1100.0	4.140	34.938	270.2	4.054
1150.0	4.079	34.934	270.8	3.989
1200.0	4.008	34.930	271.5	3.914
1250.0	3.901	34.922	272.9	3.804
1300.0	3.918	34.932	271.7	3.816
1350.0	3.902	34.944	270.9	3.796
1400.0	3.840	34.951	271.2	3.731
1450.0	3.800	34.955	271.4	3.686
1500.0	3.690	34.966	272.3	3.573
1550.0	3.634	34.971	272.8	3.513
1600.0	3.598	34.974	273.0	3.474
1650.0	3.570	34.976	273.4	3.441
1700.0	3.545	34.977	273.5	3.413
1703.0	3.547	34.977	273.7	3.414



Station: 108

Cruise	: BOCATS 2016		
Station	: 109	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1098 m	Organism	: CSIC/IIM VIGO
Position	: N 56 47.99		
	W 033 29.08		

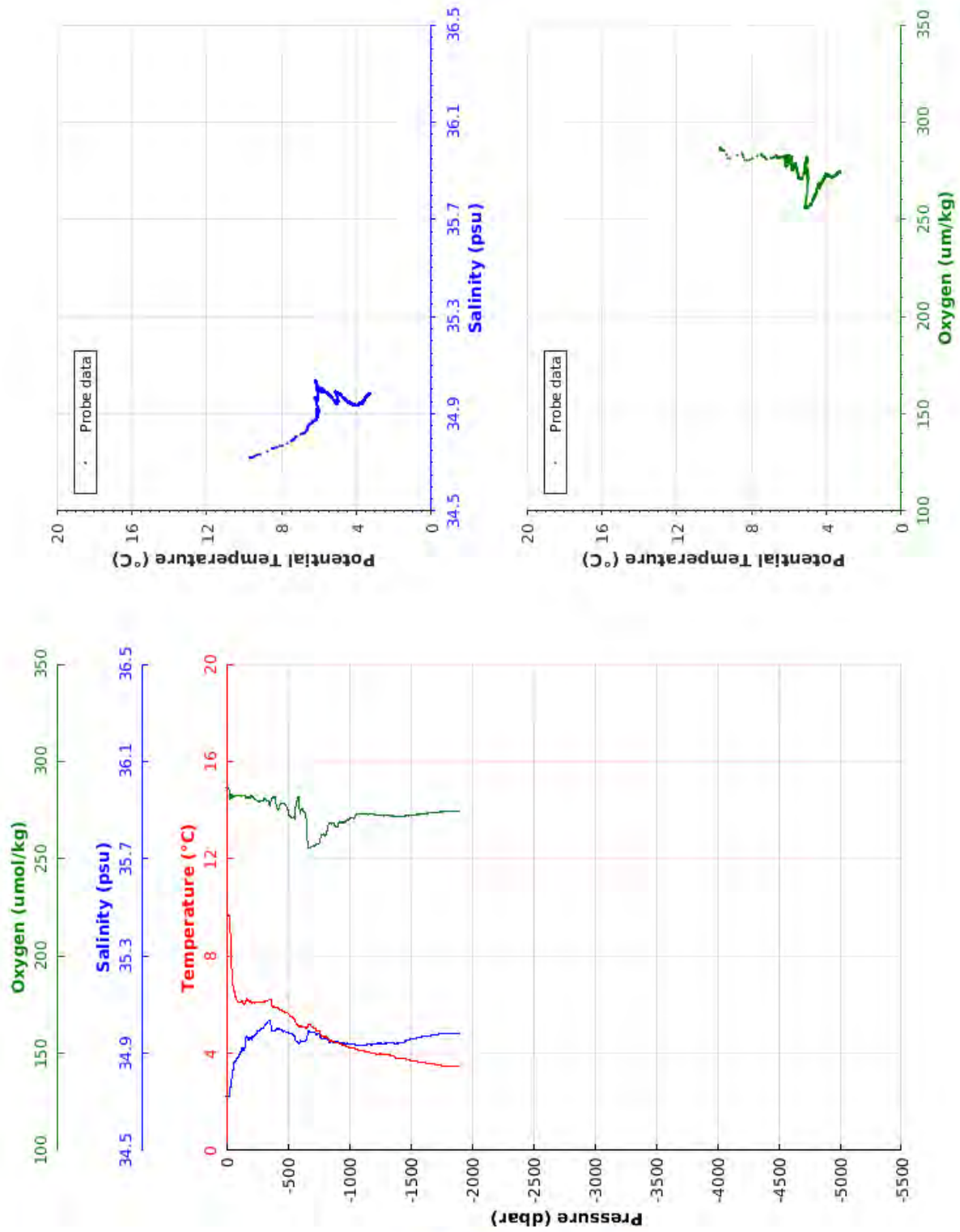
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.652	34.737	286.6	9.651
10.0	9.653	34.737	286.6	9.652
20.0	9.618	34.741	286.1	9.616
30.0	9.067	34.772	283.3	9.064
40.0	7.834	34.808	282.1	7.830
50.0	7.440	34.823	280.7	7.435
100.0	6.090	34.888	282.7	6.081
150.0	6.227	34.970	281.3	6.214
200.0	6.328	35.002	280.5	6.310
250.0	6.374	35.031	279.3	6.352
300.0	6.248	35.026	279.2	6.222
350.0	6.297	35.057	272.8	6.266
400.0	6.133	35.043	269.7	6.098
450.0	5.898	35.018	269.7	5.858
500.0	5.657	34.997	270.7	5.614
550.0	5.473	35.000	259.5	5.427
600.0	5.310	34.989	260.0	5.260
650.0	5.025	34.966	264.8	4.972
700.0	4.838	34.965	261.4	4.782
750.0	4.642	34.956	262.3	4.582
800.0	4.572	34.953	263.1	4.509
850.0	4.490	34.946	266.3	4.423
900.0	4.391	34.942	267.0	4.320
950.0	4.257	34.937	268.5	4.183
1000.0	4.177	34.934	270.1	4.099
1050.0	4.143	34.934	270.6	4.061
1100.0	4.043	34.935	271.7	3.957
1101.0	4.033	34.935	271.8	3.948



Station: 109

Cruise	: BOCATS 2016		
Station	: 110	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1895 m	Organism	: CSIC/IIM VIGO
Position	: N 56 51.02		
	W 033 26.00		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.690	34.721	286.4	9.689
10.0	9.695	34.721	286.1	9.694
20.0	9.660	34.721	286.6	9.658
30.0	9.269	34.733	281.3	9.266
40.0	7.698	34.778	282.6	7.694
50.0	6.992	34.815	281.4	6.987
100.0	6.106	34.886	282.4	6.097
150.0	6.044	34.918	282.6	6.031
200.0	6.105	34.960	281.7	6.088
250.0	6.092	34.983	280.2	6.070
300.0	6.113	35.002	279.7	6.087
350.0	6.221	35.035	279.3	6.190
400.0	5.880	34.990	282.0	5.845
450.0	5.781	34.996	278.2	5.743
500.0	5.643	34.989	275.8	5.600
550.0	5.430	34.973	271.1	5.383
600.0	5.111	34.948	277.1	5.062
650.0	5.041	34.954	271.9	4.988
700.0	5.080	34.988	256.2	5.022
750.0	4.913	34.980	257.6	4.852
800.0	4.675	34.961	262.7	4.611
850.0	4.505	34.946	268.3	4.438
900.0	4.459	34.948	266.3	4.387
950.0	4.338	34.939	269.0	4.263
1000.0	4.231	34.938	270.4	4.153
1050.0	4.173	34.937	271.5	4.091
1100.0	4.110	34.934	273.2	4.024
1150.0	4.054	34.936	272.9	3.965
1200.0	3.998	34.936	272.8	3.905
1250.0	3.976	34.941	272.5	3.879
1300.0	3.930	34.941	272.2	3.828
1350.0	3.913	34.944	272.2	3.807
1400.0	3.810	34.941	271.7	3.701
1450.0	3.785	34.946	271.8	3.672
1500.0	3.701	34.959	272.3	3.584
1550.0	3.673	34.963	272.5	3.553
1600.0	3.621	34.970	273.0	3.496
1650.0	3.577	34.972	273.4	3.448
1700.0	3.548	34.976	273.8	3.415
1750.0	3.496	34.980	274.0	3.359
1800.0	3.478	34.981	274.1	3.337
1850.0	3.467	34.981	274.2	3.322
1900.0	3.451	34.982	274.3	3.301
1912.0	3.451	34.982	274.5	3.300

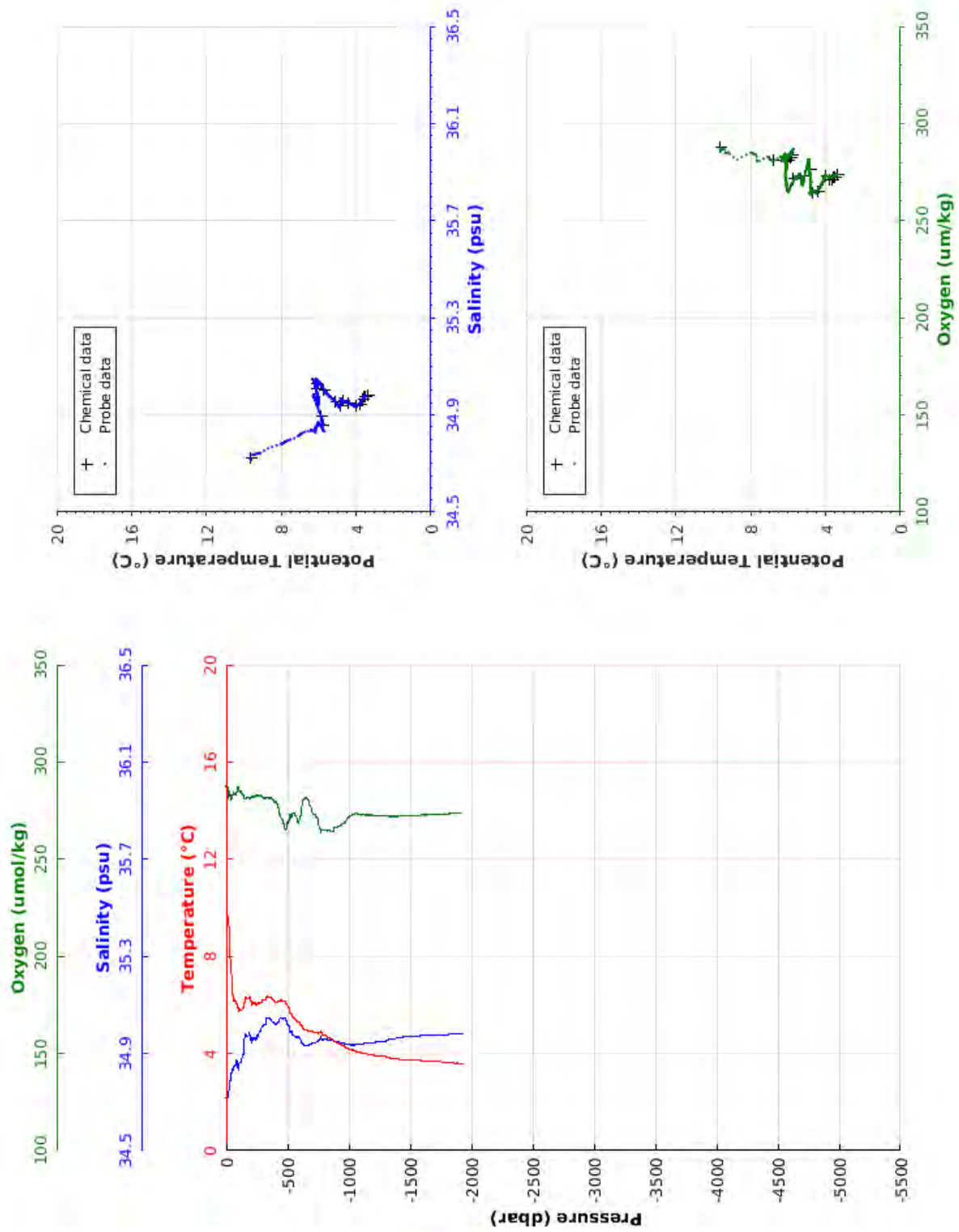


Station: 110



Cruise	: BOCATS 2016		
Station	: 111	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1924 m	Organism	: CSIC/IIM VIGO
Position	: N 56 54.59 W 033 21.27		

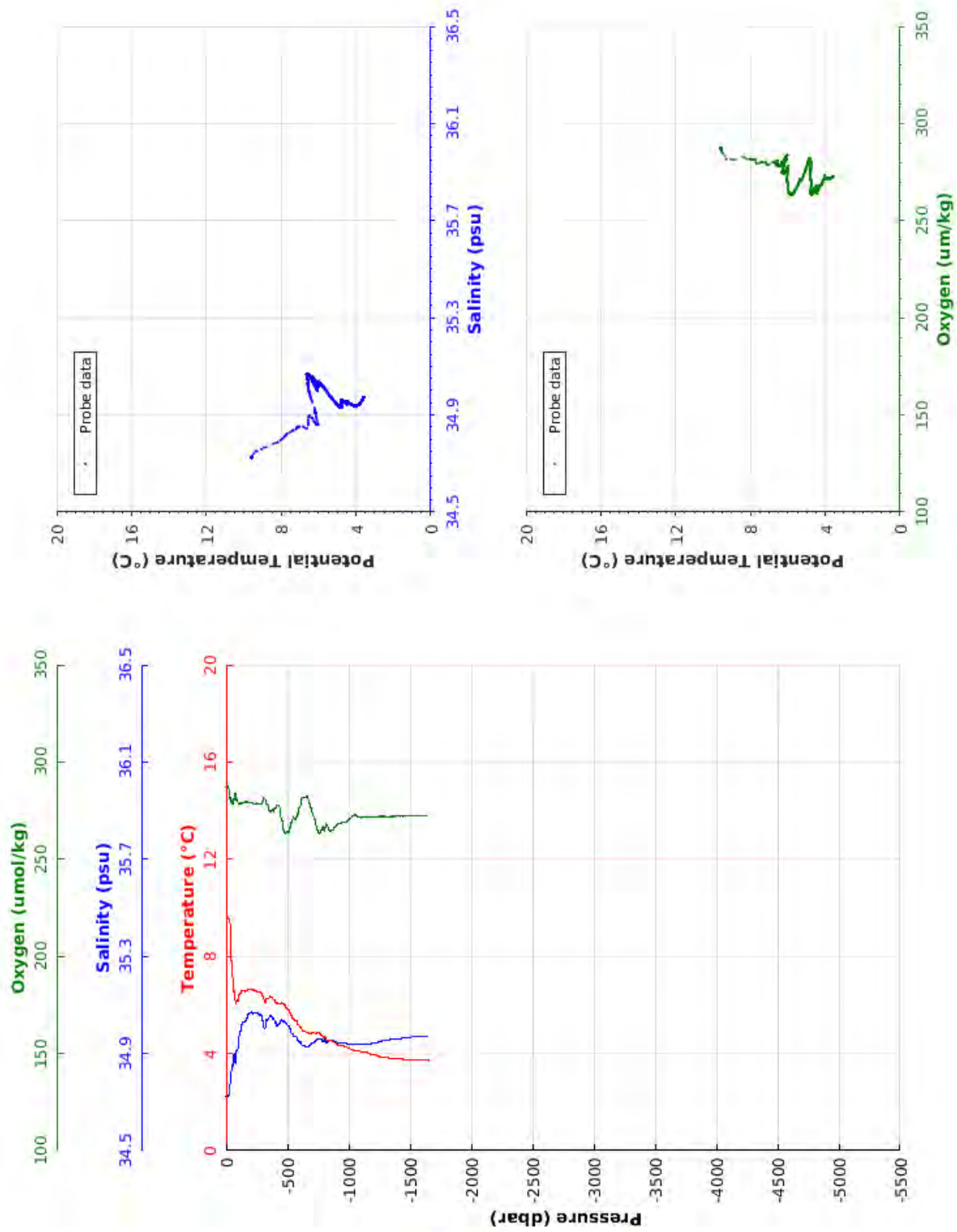
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.639	34.717	287.7	9.639
10.0	9.641	34.718	287.4	9.640
20.0	9.364	34.738	284.9	9.361
30.0	7.971	34.781	284.9	7.968
40.0	7.636	34.795	280.5	7.632
50.0	6.824	34.829	280.9	6.820
100.0	5.763	34.835	286.3	5.755
150.0	6.152	34.946	282.3	6.139
200.0	6.183	34.969	281.5	6.165
250.0	6.027	34.964	283.2	6.005
300.0	6.209	35.013	282.0	6.183
350.0	6.331	35.045	281.6	6.300
400.0	6.143	35.024	279.2	6.107
450.0	6.182	35.044	271.8	6.142
500.0	5.949	35.025	267.0	5.905
550.0	5.478	34.977	273.6	5.431
600.0	5.247	34.963	269.5	5.197
650.0	4.952	34.933	281.6	4.900
700.0	4.912	34.942	275.6	4.855
750.0	4.849	34.948	270.9	4.789
800.0	4.760	34.958	265.1	4.695
850.0	4.610	34.955	264.9	4.542
900.0	4.450	34.948	266.5	4.379
950.0	4.330	34.943	268.2	4.255
1000.0	4.173	34.937	271.3	4.096
1050.0	4.104	34.936	273.3	4.022
1100.0	4.034	34.940	272.8	3.949
1150.0	3.974	34.942	272.7	3.885
1200.0	3.937	34.945	272.6	3.844
1250.0	3.892	34.949	272.5	3.795
1300.0	3.872	34.951	272.3	3.771
1350.0	3.807	34.960	272.1	3.702
1400.0	3.768	34.965	272.0	3.659
1450.0	3.733	34.968	272.4	3.620
1500.0	3.726	34.969	272.4	3.609
1550.0	3.721	34.971	272.6	3.600
1600.0	3.705	34.974	272.9	3.579
1650.0	3.687	34.976	272.8	3.557
1700.0	3.679	34.976	272.9	3.545
1750.0	3.659	34.978	273.2	3.520
1800.0	3.633	34.978	273.3	3.489
1850.0	3.608	34.979	273.5	3.460
1900.0	3.588	34.980	273.7	3.436
1940.0	3.573	34.980	273.9	3.417



Station: 111

Cruise	: BOCATS 2016		
Station	: 112	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1644 m	Organism	: CSIC/IIM VIGO
Position	: N 56 57.00		
	W 033 18.20		

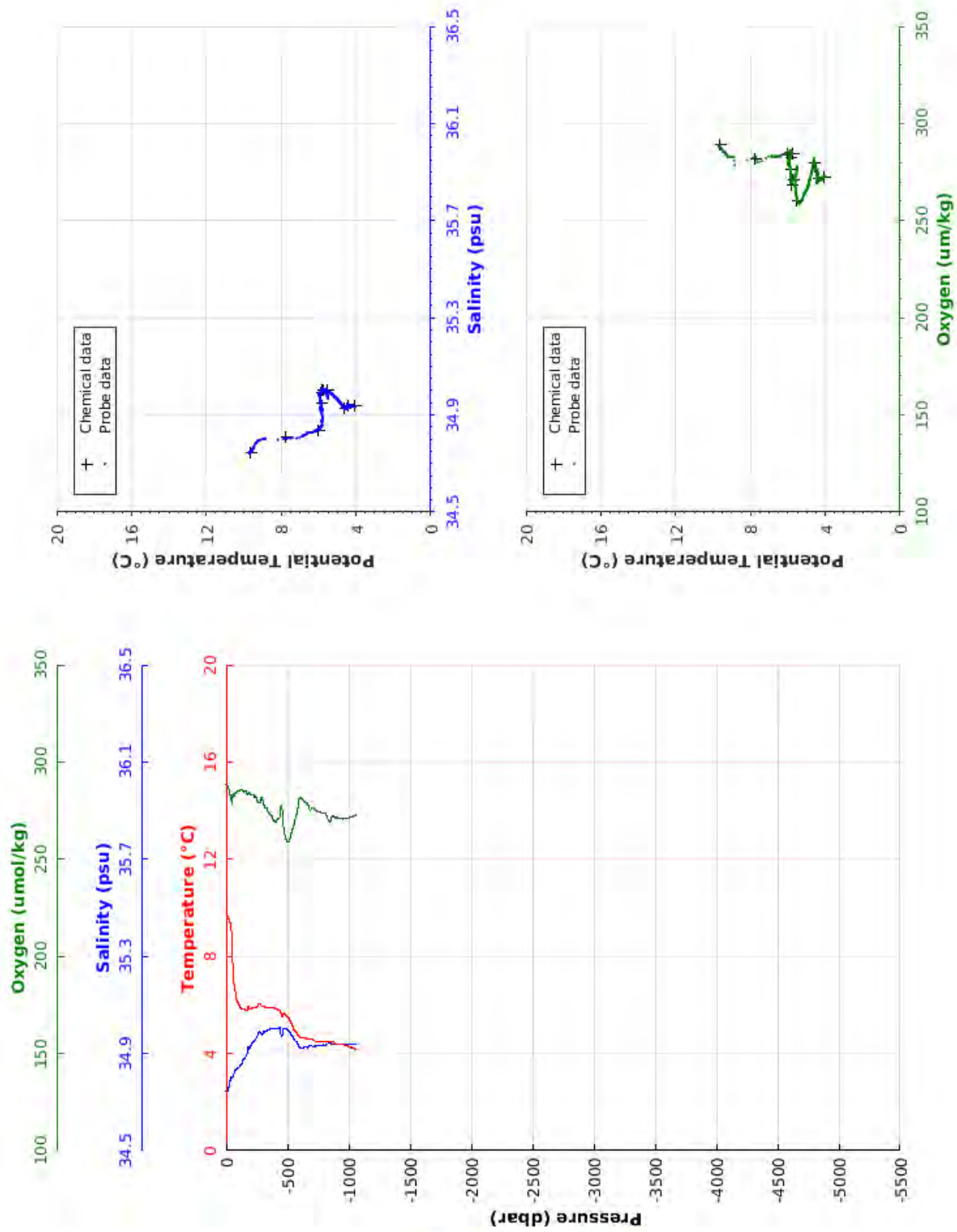
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.624	34.724	287.3	9.624
10.0	9.595	34.725	287.5	9.594
20.0	9.562	34.724	287.3	9.559
30.0	9.460	34.740	284.6	9.456
40.0	7.959	34.802	281.4	7.955
50.0	7.358	34.836	279.9	7.353
100.0	6.221	34.923	280.9	6.212
150.0	6.581	35.032	279.1	6.568
200.0	6.660	35.069	279.2	6.642
250.0	6.566	35.066	278.7	6.543
300.0	6.345	35.036	279.4	6.318
350.0	6.284	35.042	277.6	6.253
400.0	6.141	35.032	275.5	6.105
450.0	6.075	35.033	272.7	6.035
500.0	5.835	35.018	263.4	5.791
550.0	5.383	34.972	271.3	5.337
600.0	5.105	34.947	276.1	5.056
650.0	4.890	34.930	282.0	4.837
700.0	4.840	34.940	275.9	4.784
750.0	4.844	34.961	265.0	4.783
800.0	4.682	34.954	265.9	4.618
850.0	4.556	34.957	264.3	4.488
900.0	4.402	34.946	267.1	4.331
950.0	4.318	34.942	268.7	4.243
1000.0	4.221	34.939	270.0	4.143
1050.0	4.123	34.936	272.7	4.041
1100.0	4.083	34.938	271.4	3.997
1150.0	4.034	34.939	271.6	3.944
1200.0	3.952	34.942	271.9	3.859
1250.0	3.874	34.949	271.8	3.777
1300.0	3.828	34.954	272.0	3.727
1350.0	3.805	34.957	272.0	3.701
1400.0	3.779	34.961	272.1	3.670
1450.0	3.758	34.964	272.2	3.645
1500.0	3.748	34.966	272.3	3.631
1550.0	3.726	34.969	272.3	3.604
1600.0	3.717	34.971	272.5	3.591
1650.0	3.710	34.972	272.4	3.580
1654.0	3.710	34.972	272.7	3.579



Station: 112

Cruise	: BOCATS 2016		
Station	: 113	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1068 m	Organism	: CSIC/IIM VIGO
Position	: N 57 10.52		
	W 033 0.10		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.689	34.744	288.5	9.689
10.0	9.685	34.744	288.2	9.683
20.0	9.569	34.754	287.1	9.566
30.0	9.452	34.772	285.4	9.448
40.0	9.207	34.796	282.6	9.203
50.0	8.176	34.798	281.1	8.171
100.0	6.023	34.840	285.0	6.015
150.0	5.815	34.879	284.8	5.803
200.0	5.856	34.930	283.8	5.839
250.0	5.928	34.963	281.5	5.906
300.0	5.931	34.982	281.7	5.905
350.0	5.897	34.997	274.2	5.867
400.0	5.854	35.004	269.8	5.820
450.0	5.622	34.983	274.6	5.584
500.0	5.505	34.996	259.5	5.463
550.0	5.069	34.967	265.4	5.024
600.0	4.666	34.925	280.7	4.619
650.0	4.623	34.926	279.5	4.572
700.0	4.594	34.932	275.6	4.538
750.0	4.487	34.934	274.5	4.428
800.0	4.493	34.935	273.9	4.430
850.0	4.513	34.945	269.3	4.446
900.0	4.406	34.939	271.3	4.335
950.0	4.397	34.939	271.0	4.322
1000.0	4.295	34.938	271.1	4.216
1050.0	4.166	34.936	272.6	4.084
1072.0	4.150	34.937	272.8	4.066

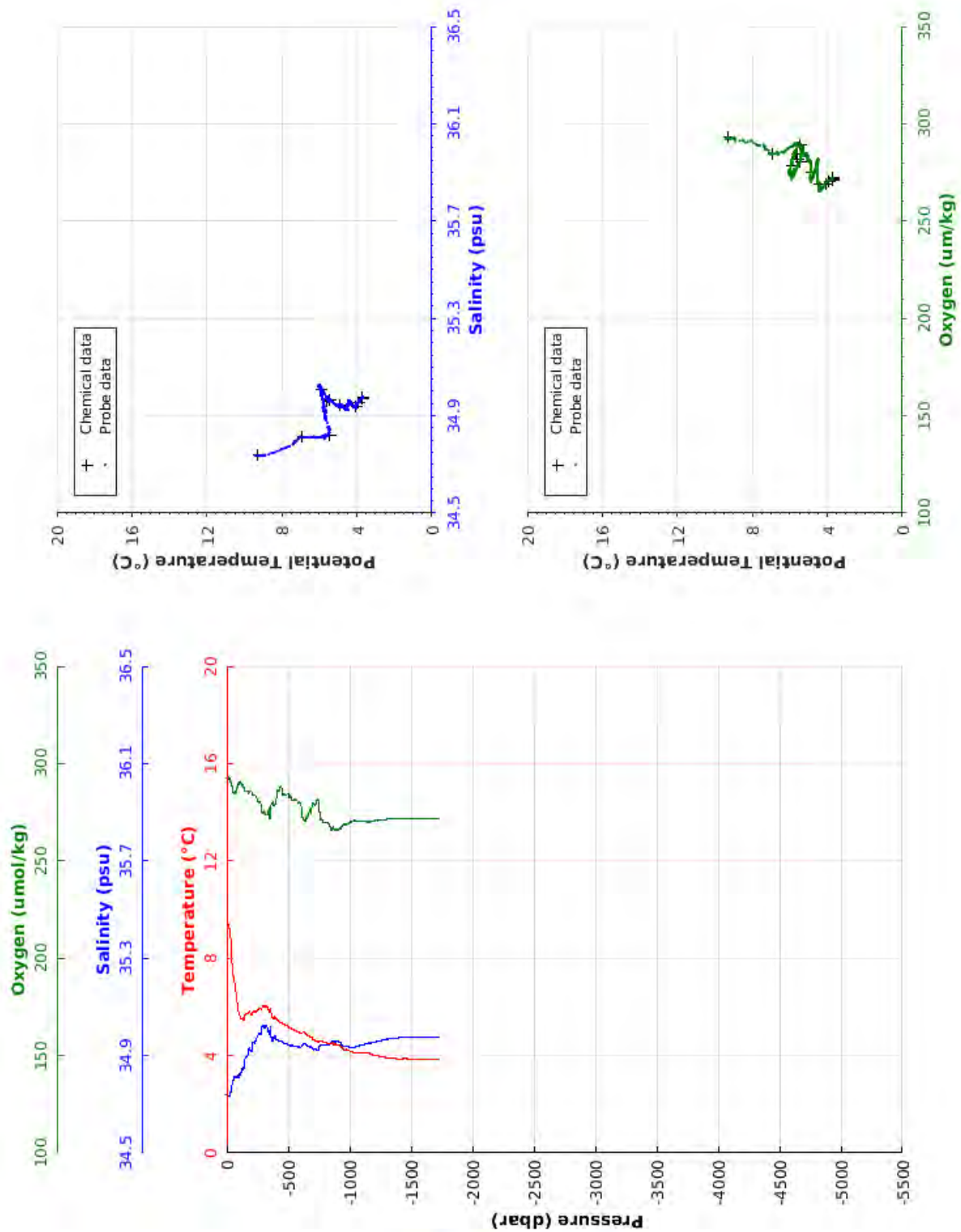


Station: 113



Cruise	: BOCATS 2016		
Station	: 114	Cast	: 1
Date	: 22/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1730 m	Organism	: CSIC/IIM VIGO
Position	: N 57 34.66 W 032 28.67		

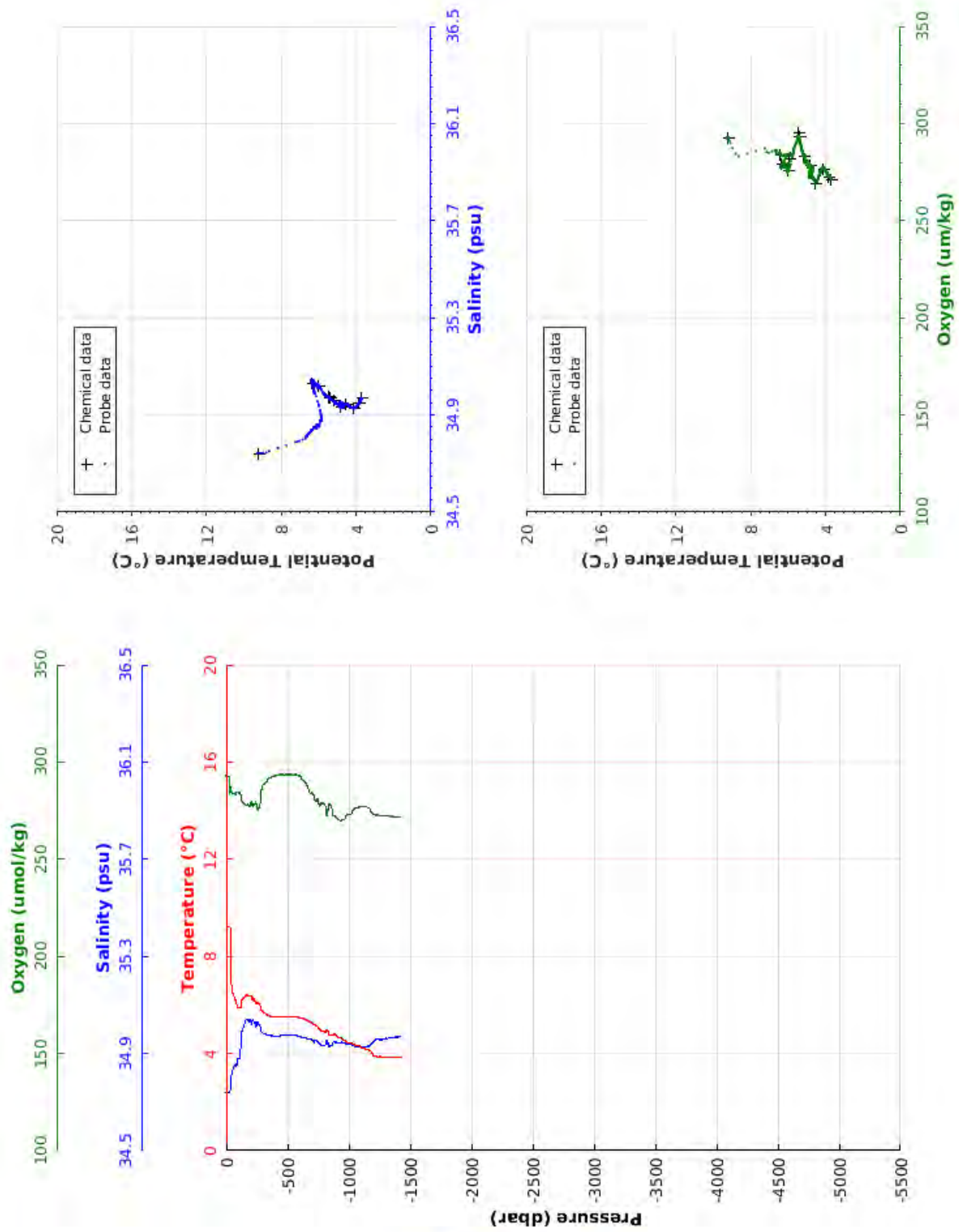
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.378	34.738	292.4	9.378
10.0	9.380	34.738	292.7	9.379
20.0	9.257	34.736	293.0	9.255
30.0	8.923	34.739	291.5	8.920
40.0	8.015	34.764	291.0	8.011
50.0	7.358	34.789	288.3	7.354
100.0	5.720	34.808	289.9	5.711
150.0	5.675	34.884	286.4	5.663
200.0	5.698	34.917	285.7	5.681
250.0	5.876	34.976	282.3	5.855
300.0	6.072	35.023	274.8	6.046
350.0	5.795	34.990	277.0	5.765
400.0	5.578	34.979	278.8	5.544
450.0	5.345	34.958	288.5	5.307
500.0	5.194	34.945	284.6	5.153
550.0	5.032	34.938	281.5	4.988
600.0	4.930	34.935	279.5	4.881
650.0	4.856	34.942	272.1	4.804
700.0	4.667	34.926	278.2	4.611
750.0	4.549	34.924	281.6	4.490
800.0	4.547	34.944	269.8	4.484
850.0	4.508	34.951	267.0	4.440
900.0	4.448	34.960	265.7	4.377
950.0	4.265	34.940	268.2	4.191
1000.0	4.194	34.936	269.5	4.116
1050.0	4.128	34.934	270.6	4.046
1100.0	4.113	34.944	270.2	4.027
1150.0	4.112	34.950	270.0	4.022
1200.0	4.003	34.956	270.6	3.909
1250.0	3.964	34.959	270.9	3.867
1300.0	3.919	34.967	271.3	3.818
1350.0	3.885	34.970	271.6	3.779
1400.0	3.864	34.973	271.7	3.754
1450.0	3.873	34.974	271.5	3.758
1500.0	3.852	34.975	271.7	3.733
1550.0	3.848	34.975	271.7	3.725
1600.0	3.837	34.976	271.8	3.709
1650.0	3.838	34.977	271.9	3.706
1700.0	3.840	34.977	271.7	3.703
1742.0	3.842	34.977	272.0	3.701



Station: 114

Cruise	: BOCATS 2016		
Station	: 115	Cast	: 1
Date	: 23/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1431 m	Organism	: CSIC/IIM VIGO
Position	: N 57 48.02		
	W 032 12.99		

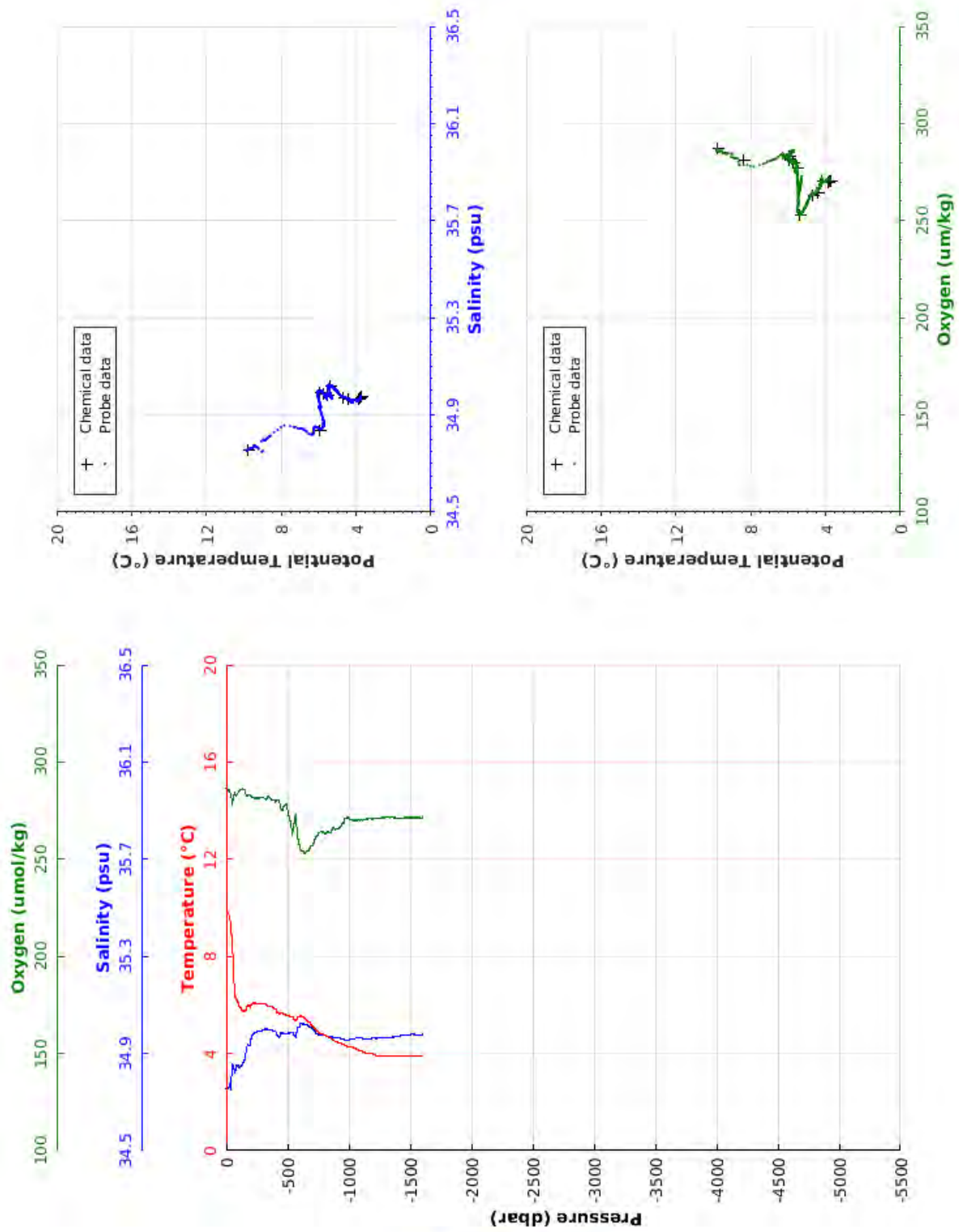
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.234	34.741	292.9	9.234
10.0	9.232	34.740	292.4	9.231
20.0	9.229	34.741	292.6	9.227
30.0	9.211	34.742	291.9	9.208
40.0	7.146	34.789	285.3	7.142
50.0	6.538	34.823	284.5	6.533
100.0	5.912	34.878	284.4	5.903
150.0	6.326	35.014	278.5	6.313
200.0	6.379	35.039	277.3	6.361
250.0	6.061	35.017	278.7	6.039
300.0	5.726	34.986	287.0	5.700
350.0	5.552	34.975	291.3	5.523
400.0	5.498	34.973	292.9	5.465
450.0	5.493	34.974	293.7	5.455
500.0	5.502	34.975	293.5	5.460
550.0	5.503	34.974	293.4	5.456
600.0	5.479	34.971	292.9	5.428
650.0	5.394	34.964	289.1	5.339
700.0	5.255	34.956	284.1	5.196
750.0	5.064	34.945	281.0	5.002
800.0	4.896	34.933	278.8	4.831
850.0	4.765	34.930	277.9	4.696
900.0	4.717	34.947	271.5	4.644
950.0	4.588	34.945	269.9	4.512
1000.0	4.447	34.938	272.9	4.368
1050.0	4.334	34.930	276.2	4.251
1100.0	4.242	34.928	277.1	4.155
1150.0	4.153	34.929	276.9	4.063
1200.0	3.936	34.949	273.4	3.843
1250.0	3.859	34.960	272.7	3.763
1300.0	3.863	34.959	272.5	3.762
1350.0	3.829	34.966	272.0	3.724
1400.0	3.828	34.968	271.9	3.719
1438.0	3.827	34.969	272.0	3.715



Station: 115

Cruise	: BOCATS 2016		
Station	: 116	Cast	: 1
Date	: 23/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1598 m	Organism	: CSIC/IIM VIGO
Position	: N 58 12.03 W 031 45.02		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.811	34.754	286.5	9.811
10.0	9.812	34.754	286.0	9.810
20.0	9.756	34.759	285.9	9.753
30.0	9.503	34.767	284.6	9.500
40.0	9.078	34.791	282.6	9.074
50.0	8.645	34.811	279.0	8.640
100.0	6.075	34.850	283.3	6.066
150.0	5.740	34.871	285.8	5.727
200.0	5.975	34.952	282.6	5.958
250.0	6.074	34.989	281.2	6.052
300.0	6.045	34.995	282.0	6.019
350.0	5.949	34.996	282.5	5.919
400.0	5.814	34.991	280.3	5.780
450.0	5.660	34.984	275.5	5.621
500.0	5.562	34.979	278.1	5.520
550.0	5.412	34.976	265.9	5.366
600.0	5.526	35.013	258.0	5.475
650.0	5.380	35.018	253.4	5.325
700.0	5.163	35.005	256.9	5.104
750.0	4.909	34.982	262.3	4.848
800.0	4.771	34.974	264.2	4.706
850.0	4.663	34.972	263.7	4.595
900.0	4.470	34.966	265.5	4.399
950.0	4.380	34.959	268.1	4.305
1000.0	4.272	34.955	271.6	4.193
1050.0	4.205	34.962	269.9	4.122
1100.0	4.121	34.963	270.1	4.035
1150.0	4.012	34.960	270.5	3.923
1200.0	3.976	34.964	270.8	3.883
1250.0	3.905	34.964	271.1	3.808
1300.0	3.888	34.965	271.3	3.787
1350.0	3.881	34.966	271.4	3.776
1400.0	3.889	34.970	271.3	3.779
1450.0	3.888	34.975	271.0	3.773
1500.0	3.879	34.978	271.5	3.760
1550.0	3.882	34.978	271.4	3.758
1600.0	3.885	34.978	271.4	3.757
1609.0	3.884	34.978	271.5	3.755

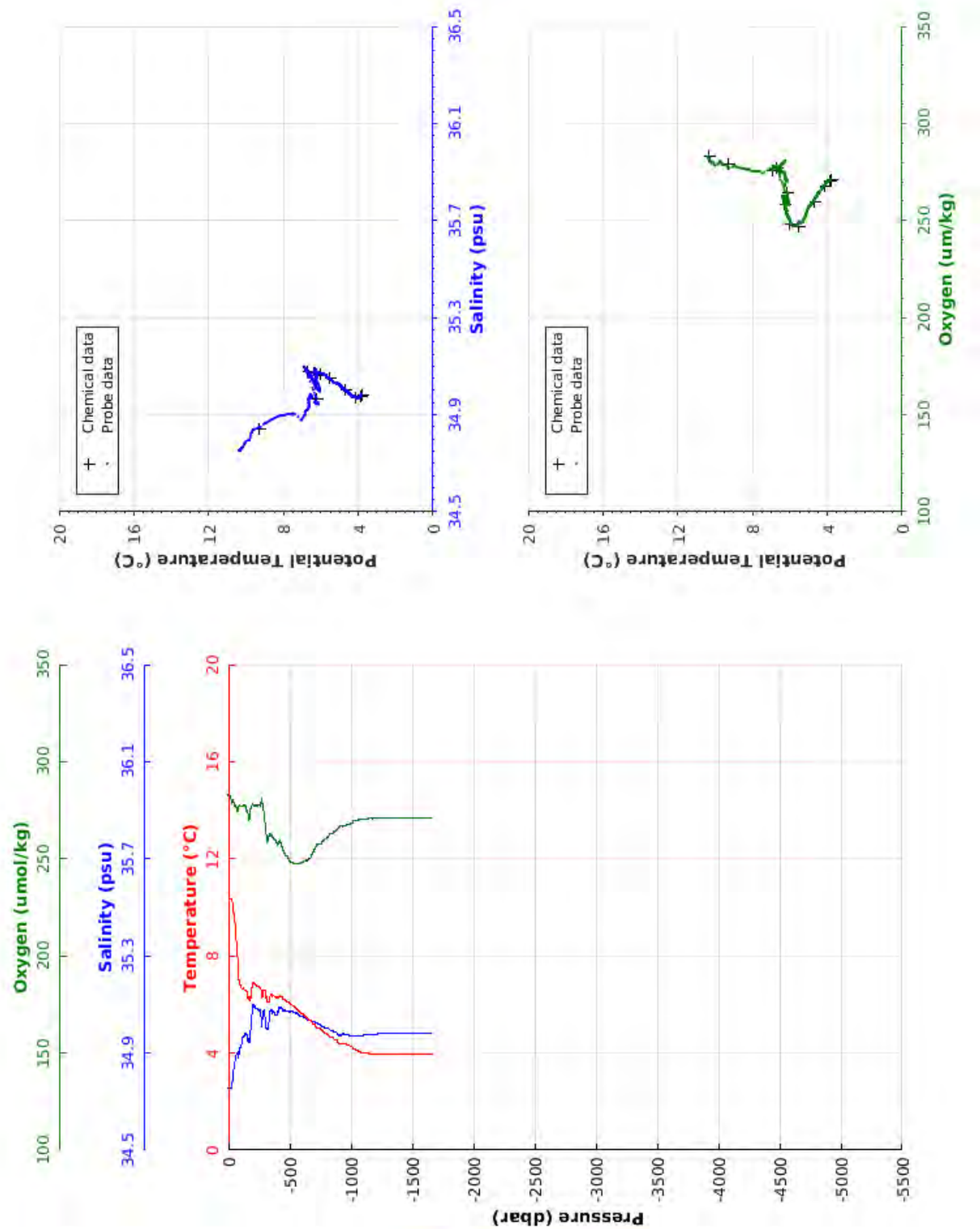


Station: 116



Cruise	: BOCATS 2016		
Station	: 117	Cast	: 1
Date	: 23/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1661 m	Organism	: CSIC/IIM VIGO
Position	: N 58 31.82 W 031 25.34		

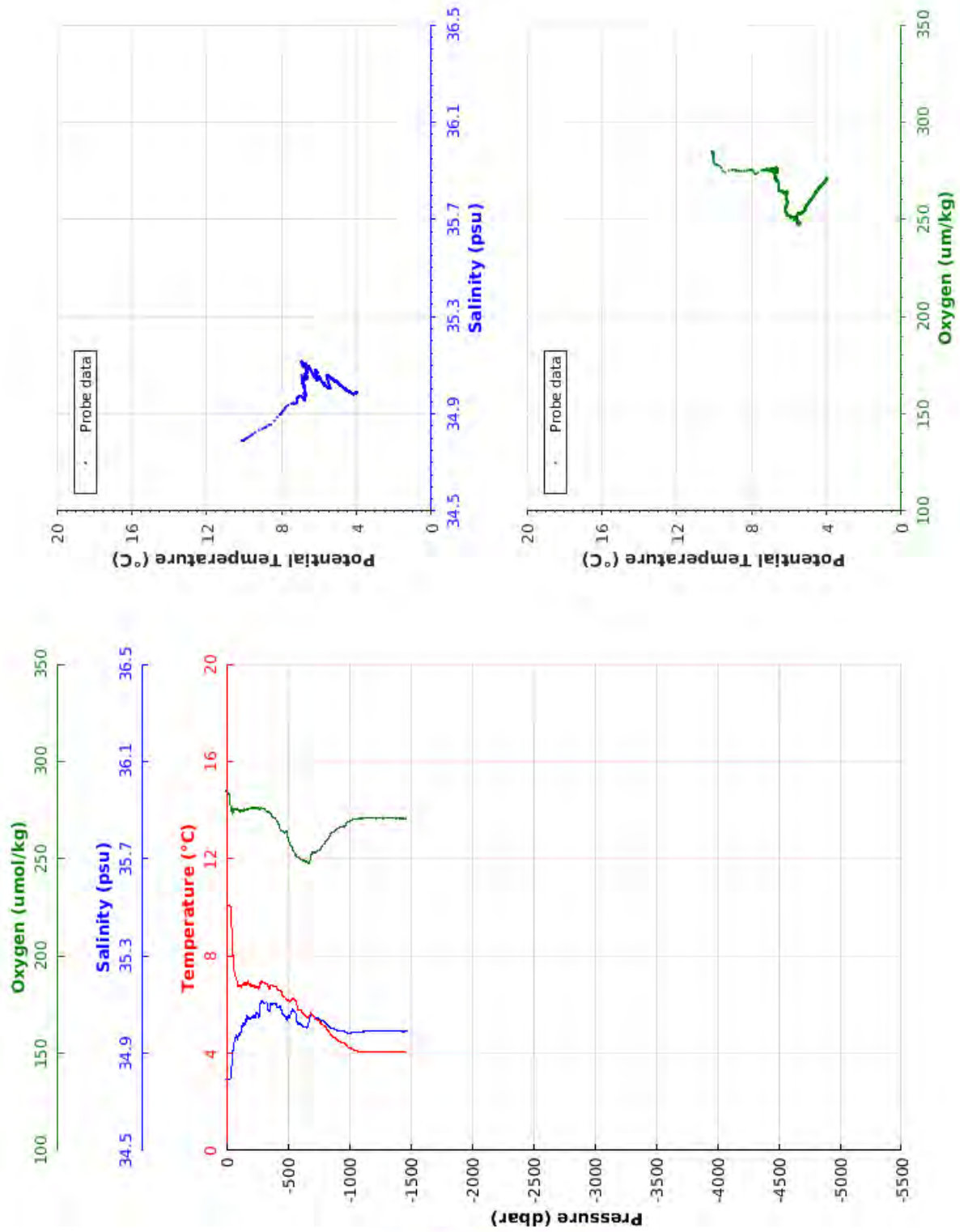
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.346	34.754	283.0	10.346
10.0	10.343	34.754	282.3	10.342
20.0	10.343	34.754	282.3	10.340
30.0	10.232	34.764	280.1	10.228
40.0	9.814	34.797	279.5	9.810
50.0	9.598	34.841	278.7	9.593
100.0	6.735	34.921	277.5	6.726
150.0	6.512	34.977	276.8	6.499
200.0	6.907	35.097	277.8	6.888
250.0	6.725	35.079	277.5	6.702
300.0	6.551	35.064	271.0	6.524
350.0	6.424	35.076	262.4	6.392
400.0	6.268	35.063	258.2	6.232
450.0	6.215	35.074	255.0	6.174
500.0	6.028	35.069	249.3	5.984
550.0	5.844	35.065	247.4	5.796
600.0	5.636	35.054	248.2	5.584
650.0	5.402	35.035	249.2	5.347
700.0	5.181	35.029	254.2	5.123
750.0	5.008	35.020	257.4	4.947
800.0	4.798	35.003	260.1	4.733
850.0	4.631	34.993	262.9	4.563
900.0	4.408	34.976	265.9	4.337
950.0	4.364	34.977	266.9	4.289
1000.0	4.261	34.973	268.0	4.183
1050.0	4.118	34.970	269.6	4.037
1100.0	4.014	34.973	270.4	3.929
1150.0	3.977	34.976	270.7	3.888
1200.0	3.960	34.977	270.7	3.867
1250.0	3.952	34.979	270.9	3.854
1300.0	3.944	34.980	270.9	3.842
1350.0	3.945	34.981	270.9	3.839
1400.0	3.941	34.981	271.0	3.831
1450.0	3.942	34.981	271.0	3.827
1500.0	3.942	34.981	270.9	3.823
1550.0	3.938	34.981	271.1	3.814
1600.0	3.942	34.981	271.1	3.813
1650.0	3.944	34.982	271.1	3.810
1672.0	3.945	34.982	271.3	3.810



Station: 117

Cruise	: BOCATS 2016		
Station	: 118	Cast	: 1
Date	: 23/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1463 m	Organism	: CSIC/IIM VIGO
Position	: N 58 50.72 W 031 16.17		

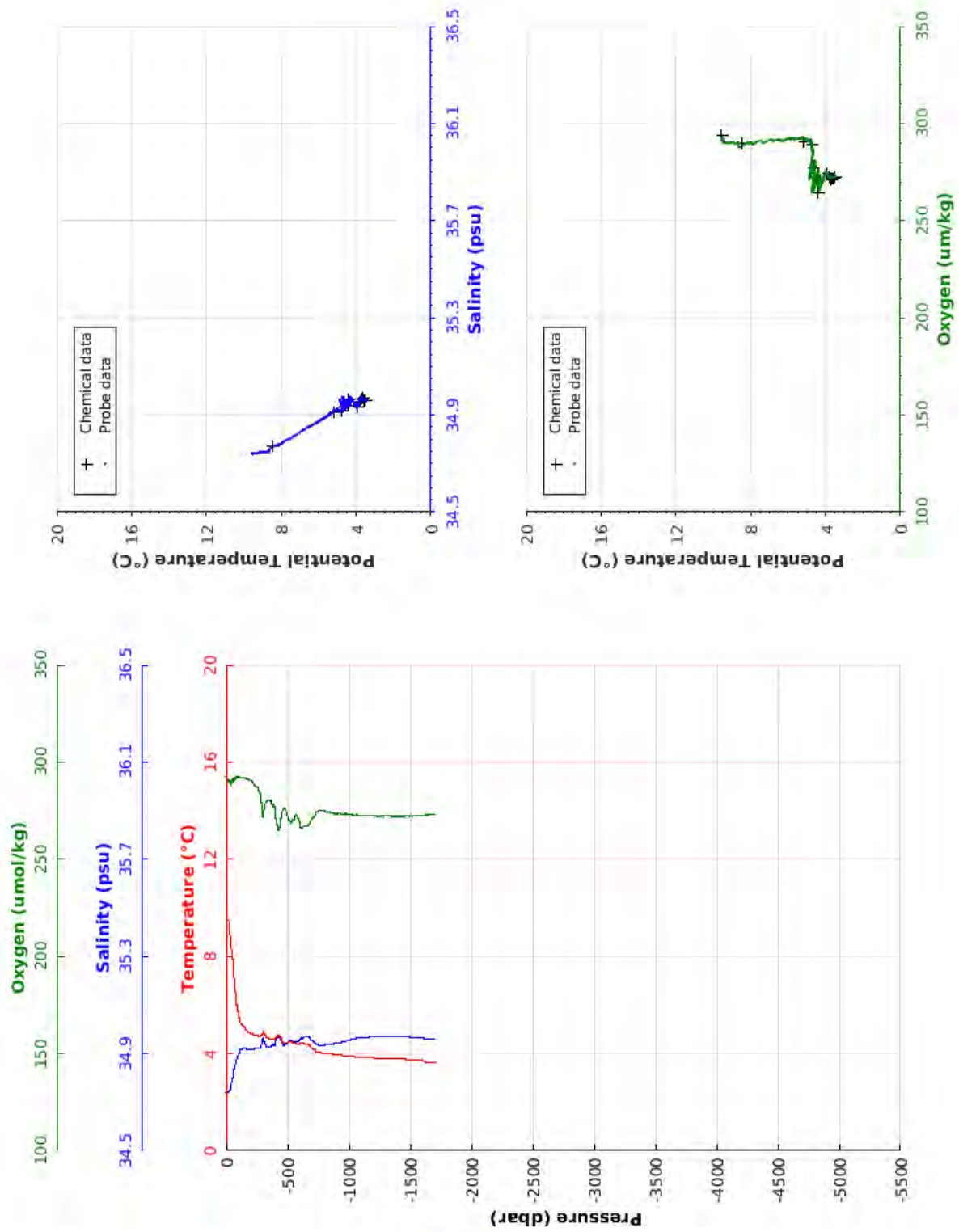
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.117	34.791	284.9	10.117
10.0	10.083	34.791	284.6	10.082
20.0	10.062	34.791	283.6	10.060
30.0	10.051	34.792	282.6	10.048
40.0	9.539	34.816	274.7	9.534
50.0	8.239	34.885	275.1	8.234
100.0	6.795	34.972	275.5	6.786
150.0	6.785	35.013	274.8	6.771
200.0	6.775	35.041	275.9	6.757
250.0	6.761	35.064	275.9	6.738
300.0	6.921	35.110	275.7	6.893
350.0	6.653	35.071	273.9	6.620
400.0	6.741	35.102	270.9	6.704
450.0	6.479	35.079	264.6	6.438
500.0	6.150	35.041	263.6	6.106
550.0	6.230	35.079	254.2	6.181
600.0	5.775	35.024	250.3	5.722
650.0	5.516	35.006	248.8	5.461
700.0	5.585	35.057	252.8	5.524
750.0	5.345	35.045	254.1	5.281
800.0	5.107	35.031	257.5	5.041
850.0	4.769	35.008	261.9	4.700
900.0	4.566	34.996	264.9	4.494
950.0	4.434	34.991	266.5	4.359
1000.0	4.218	34.982	268.8	4.140
1050.0	4.118	34.988	270.1	4.036
1100.0	4.063	34.988	270.7	3.978
1150.0	4.057	34.990	271.0	3.968
1200.0	4.061	34.990	270.8	3.967
1250.0	4.064	34.990	270.8	3.965
1300.0	4.067	34.990	270.8	3.964
1350.0	4.071	34.990	270.8	3.963
1400.0	4.073	34.990	270.8	3.961
1450.0	4.072	34.989	270.7	3.955
1472.0	4.074	34.989	270.9	3.955



Station: 118

Cruise	: BOCATS 2016		
Station	: 119	Cast	: 1
Date	: 23/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1696 m	Organism	: CSIC/IIM VIGO
Position	: N 58 58.24		
	W 032 5.84		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.528	34.740	292.8	9.528
10.0	9.514	34.741	292.1	9.513
20.0	9.495	34.741	290.8	9.492
30.0	8.914	34.747	290.5	8.911
40.0	8.571	34.763	287.8	8.567
50.0	8.022	34.781	290.0	8.016
100.0	5.619	34.893	292.1	5.611
150.0	5.047	34.922	291.8	5.035
200.0	4.824	34.917	290.3	4.808
250.0	4.748	34.922	287.3	4.729
300.0	4.867	34.954	273.8	4.844
350.0	4.612	34.928	280.6	4.585
400.0	4.608	34.942	276.7	4.578
450.0	4.579	34.952	269.4	4.544
500.0	4.456	34.943	273.5	4.418
550.0	4.438	34.951	270.3	4.396
600.0	4.404	34.954	269.9	4.359
650.0	4.401	34.969	266.9	4.351
700.0	4.206	34.955	270.4	4.153
750.0	4.053	34.936	274.5	3.996
800.0	4.014	34.935	274.9	3.954
850.0	3.987	34.939	273.8	3.923
900.0	3.960	34.942	273.3	3.892
950.0	3.910	34.948	273.2	3.839
1000.0	3.892	34.953	273.2	3.817
1050.0	3.872	34.962	272.6	3.792
1100.0	3.863	34.964	272.3	3.779
1150.0	3.846	34.967	272.3	3.758
1200.0	3.817	34.968	272.2	3.726
1250.0	3.808	34.969	272.0	3.712
1300.0	3.800	34.968	272.1	3.700
1350.0	3.791	34.970	272.0	3.687
1400.0	3.775	34.969	272.0	3.666
1450.0	3.769	34.969	272.0	3.656
1500.0	3.761	34.968	272.0	3.643
1550.0	3.740	34.966	272.3	3.618
1600.0	3.721	34.965	272.2	3.595
1650.0	3.631	34.959	272.7	3.502
1700.0	3.630	34.959	272.8	3.496
1713.0	3.626	34.958	273.1	3.491

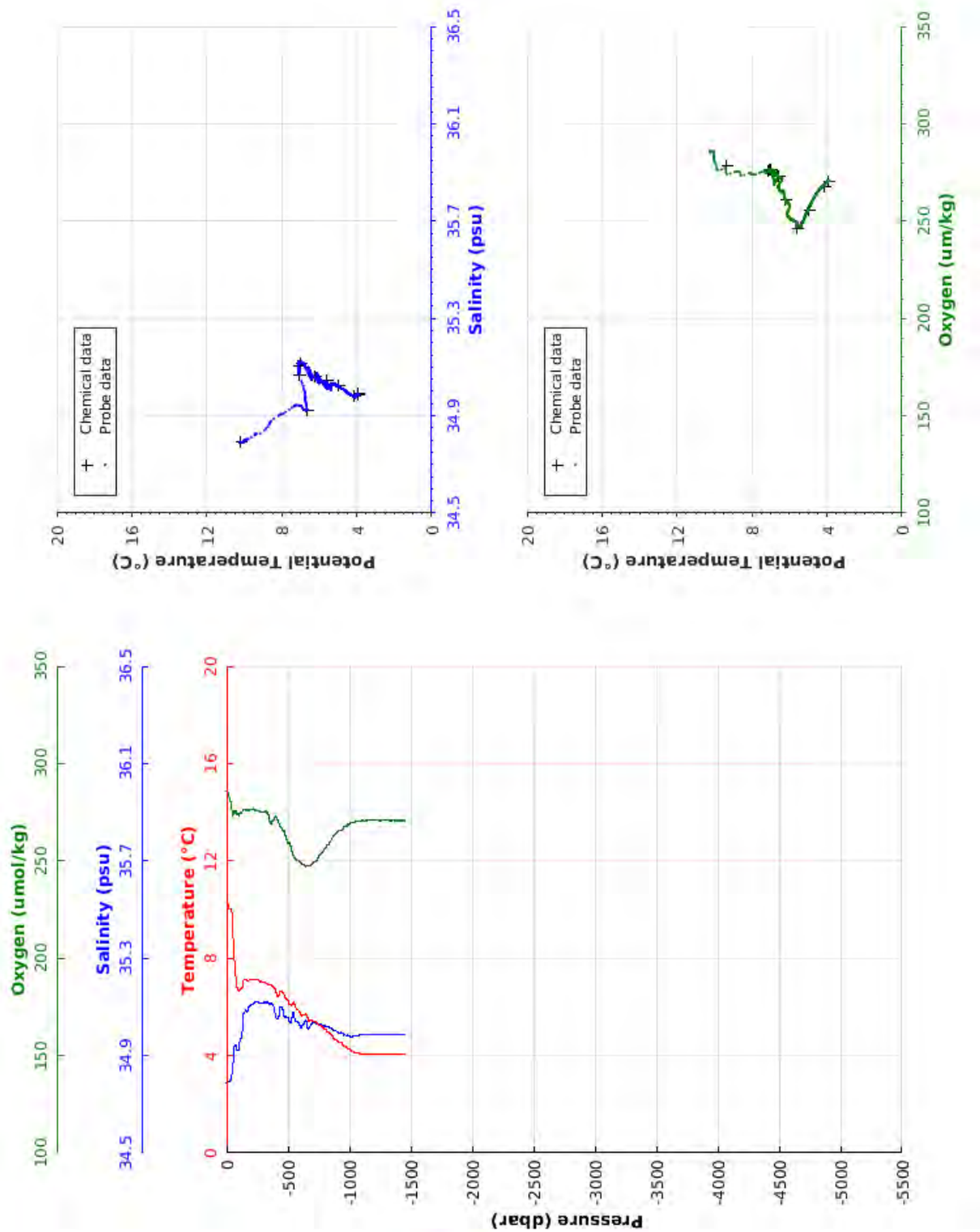


Station: 119



Cruise	: BOCATS 2016		
Station	: 120	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1453 m	Organism	: CSIC/IIM VIGO
Position	: N 58 50.71		
	W 031 16.13		

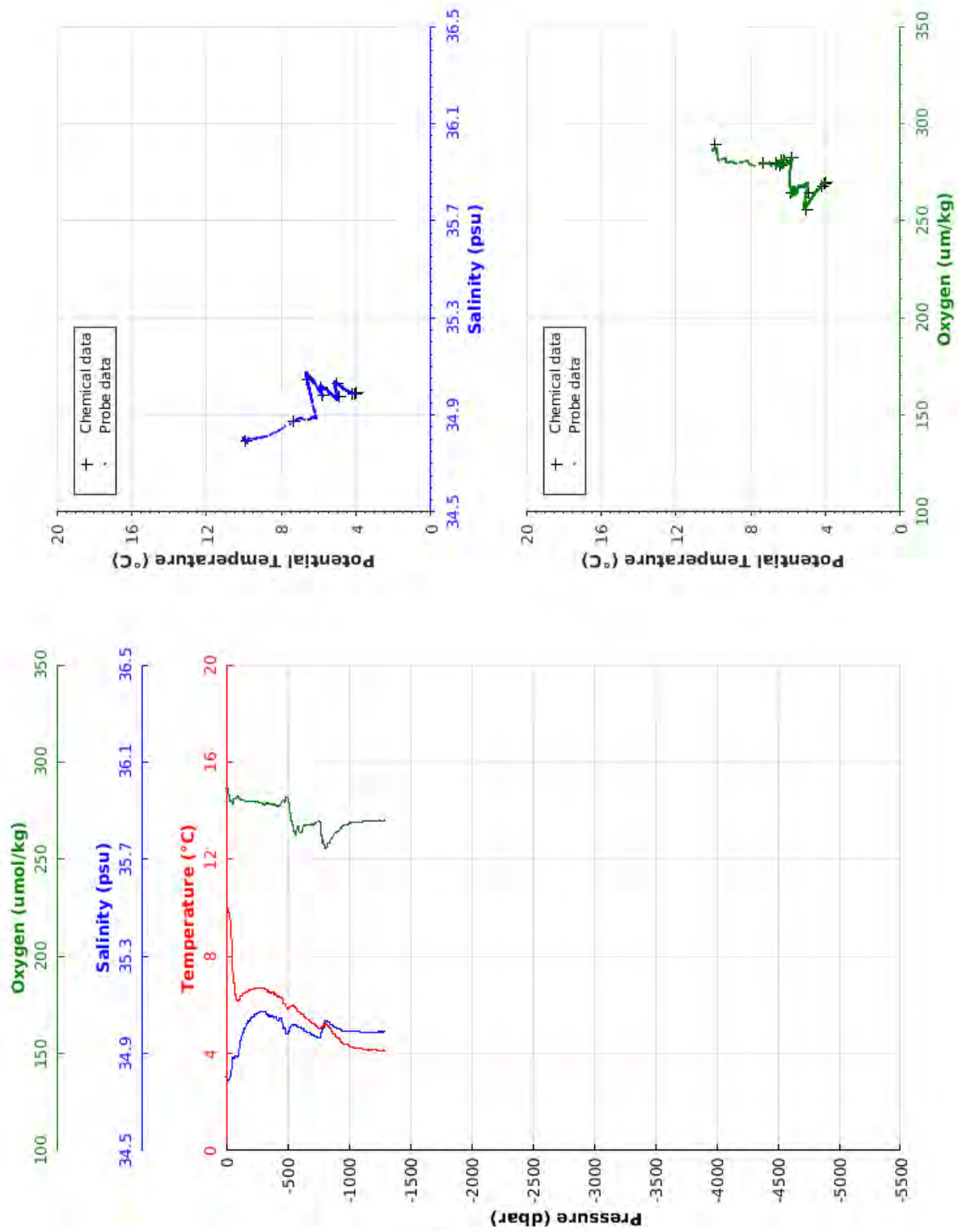
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.239	34.790	285.7	10.239
10.0	10.232	34.790	285.2	10.231
20.0	10.036	34.795	284.6	10.033
30.0	10.020	34.797	282.4	10.017
40.0	9.965	34.798	279.7	9.960
50.0	9.351	34.826	274.1	9.346
100.0	6.667	34.923	273.9	6.658
150.0	7.111	35.079	276.3	7.096
200.0	7.123	35.107	276.3	7.104
250.0	7.112	35.120	276.0	7.089
300.0	7.001	35.116	274.9	6.973
350.0	6.904	35.113	273.1	6.871
400.0	6.575	35.068	272.7	6.538
450.0	6.636	35.098	267.5	6.594
500.0	6.244	35.055	260.6	6.199
550.0	6.152	35.073	252.6	6.103
600.0	5.746	35.021	249.7	5.693
650.0	5.671	35.041	247.3	5.615
700.0	5.435	35.029	248.2	5.375
750.0	5.270	35.029	251.4	5.207
800.0	5.073	35.023	256.1	5.006
850.0	4.890	35.012	259.7	4.820
900.0	4.626	34.999	264.2	4.553
950.0	4.445	34.990	266.5	4.370
1000.0	4.252	34.980	268.7	4.173
1050.0	4.117	34.983	270.0	4.035
1100.0	4.067	34.986	270.7	3.981
1150.0	4.057	34.987	270.7	3.967
1200.0	4.049	34.988	270.8	3.955
1250.0	4.051	34.988	270.7	3.953
1300.0	4.053	34.988	270.8	3.950
1350.0	4.055	34.988	270.8	3.948
1400.0	4.058	34.988	270.7	3.946
1450.0	4.062	34.988	270.8	3.945
1464.0	4.062	34.988	270.9	3.945



Station: 120

Cruise	: BOCATS 2016		
Station	: 121	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1299 m	Organism	: CSIC/IIM VIGO
Position	: N 59 3.00		
	W 030 57.15		

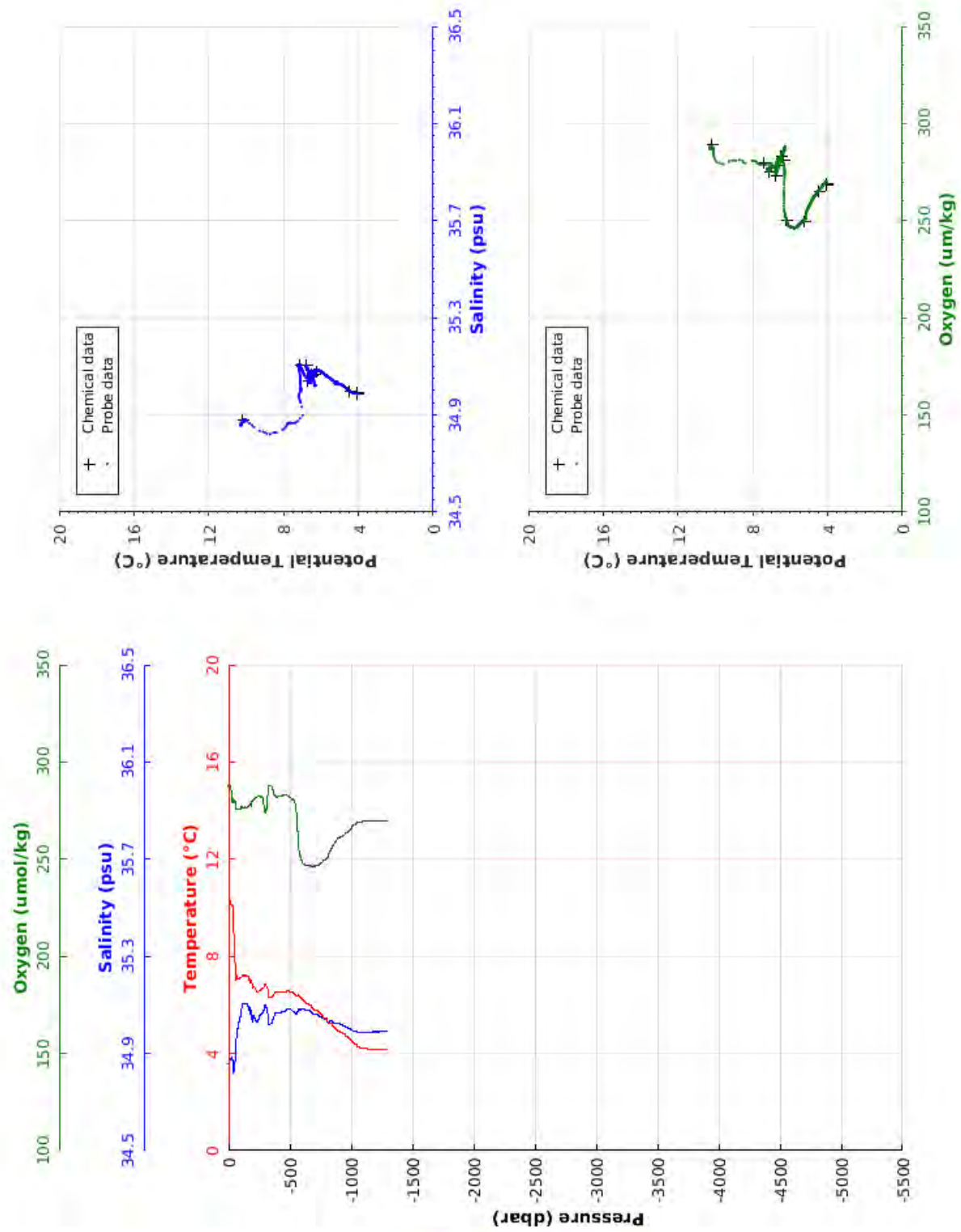
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.045	34.804	286.4	10.045
10.0	10.002	34.798	286.5	10.000
20.0	9.820	34.788	286.0	9.818
30.0	9.702	34.803	281.0	9.699
40.0	8.937	34.811	280.0	8.933
50.0	7.945	34.846	278.6	7.940
100.0	6.155	34.889	282.1	6.146
150.0	6.495	34.999	280.6	6.482
200.0	6.620	35.039	279.8	6.602
250.0	6.694	35.064	279.5	6.671
300.0	6.684	35.072	278.5	6.657
350.0	6.528	35.054	279.0	6.496
400.0	6.441	35.050	278.2	6.404
450.0	6.332	35.044	278.4	6.291
500.0	5.845	34.980	281.8	5.802
550.0	5.922	35.017	267.2	5.874
600.0	5.695	35.008	264.8	5.643
650.0	5.478	34.993	267.3	5.423
700.0	5.256	34.977	268.1	5.197
750.0	5.060	34.964	269.3	4.997
800.0	5.135	35.005	259.4	5.068
850.0	5.020	35.026	258.8	4.950
900.0	4.685	35.006	263.7	4.612
950.0	4.398	34.992	267.2	4.323
1000.0	4.311	34.991	268.1	4.232
1050.0	4.246	34.990	268.9	4.163
1100.0	4.210	34.989	269.1	4.124
1150.0	4.150	34.989	269.8	4.059
1200.0	4.141	34.989	269.8	4.046
1250.0	4.133	34.990	270.0	4.034
1300.0	4.135	34.990	270.0	4.032
1304.0	4.136	34.990	270.1	4.032



Station: 121

Cruise	: BOCATS 2016		
Station	: 122	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1302 m	Organism	: CSIC/IIM VIGO
Position	: N 59 18.01		
	W 030 34.17		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.312	34.859	287.8	10.312
10.0	10.293	34.857	287.1	10.292
20.0	10.145	34.874	287.4	10.142
30.0	10.112	34.883	284.2	10.109
40.0	9.282	34.834	280.5	9.278
50.0	7.898	34.851	280.6	7.893
100.0	7.122	35.052	275.8	7.113
150.0	7.164	35.107	276.4	7.150
200.0	6.700	35.039	280.0	6.682
250.0	6.586	35.043	282.5	6.563
300.0	6.827	35.101	274.9	6.799
350.0	6.331	35.022	287.9	6.300
400.0	6.525	35.066	282.0	6.488
450.0	6.523	35.073	282.9	6.482
500.0	6.546	35.081	282.0	6.500
550.0	6.373	35.061	277.8	6.322
600.0	6.250	35.083	249.5	6.195
650.0	6.024	35.077	246.9	5.965
700.0	5.791	35.062	246.3	5.730
750.0	5.634	35.053	247.4	5.568
800.0	5.403	35.040	249.8	5.335
850.0	5.137	35.030	256.1	5.065
900.0	4.911	35.022	260.8	4.837
950.0	4.787	35.014	262.4	4.709
1000.0	4.566	34.999	265.5	4.485
1050.0	4.284	34.989	268.7	4.201
1100.0	4.206	34.989	269.4	4.119
1150.0	4.187	34.989	269.7	4.096
1200.0	4.176	34.989	269.7	4.081
1250.0	4.177	34.989	269.7	4.078
1300.0	4.175	34.990	269.6	4.071
1308.0	4.176	34.990	269.8	4.071

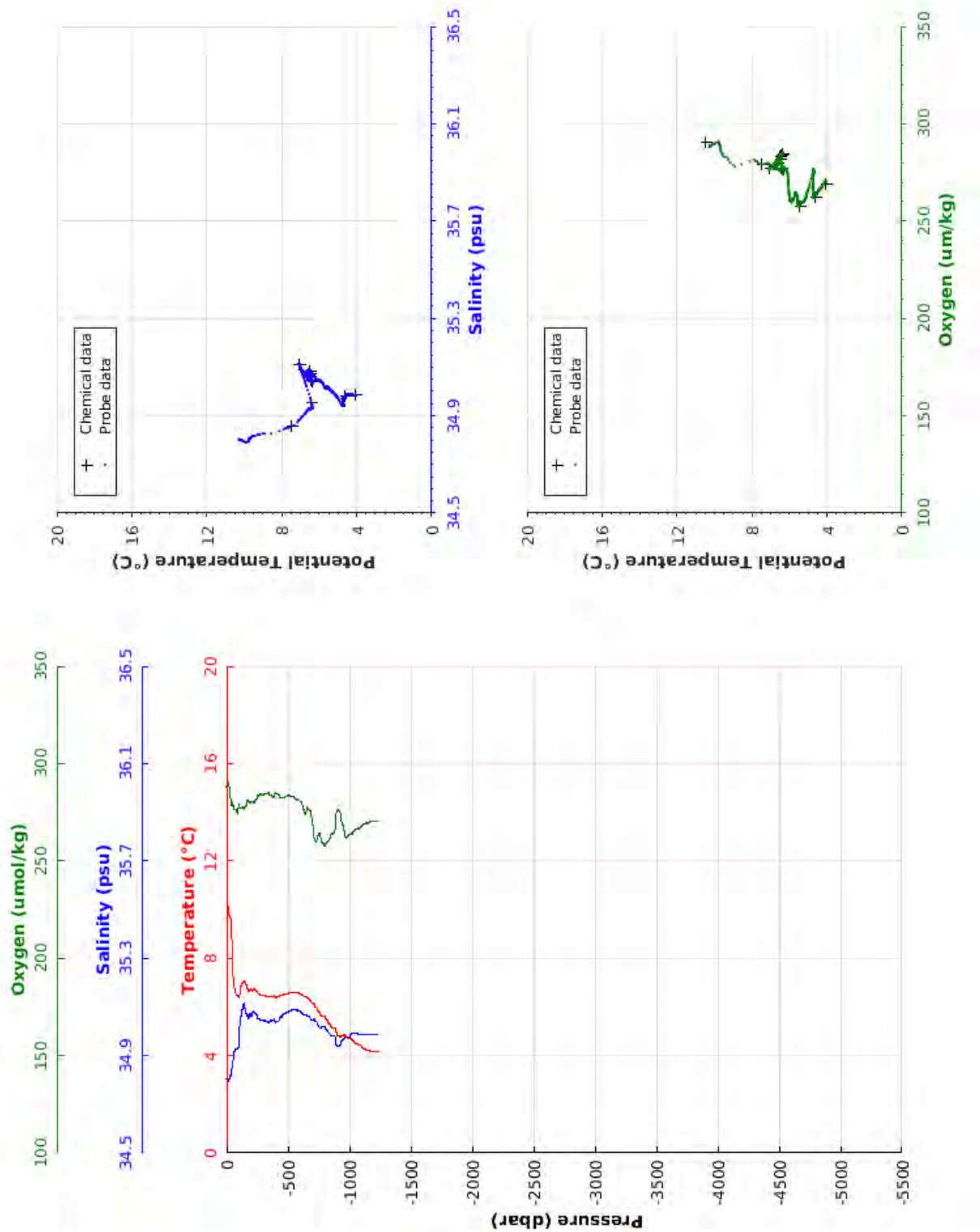


Station: 122



Cruise	: BOCATS 2016		
Station	: 123	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1240 m	Organism	: CSIC/IIM VIGO
Position	: N 59 32.97		
	W 030 11.30		

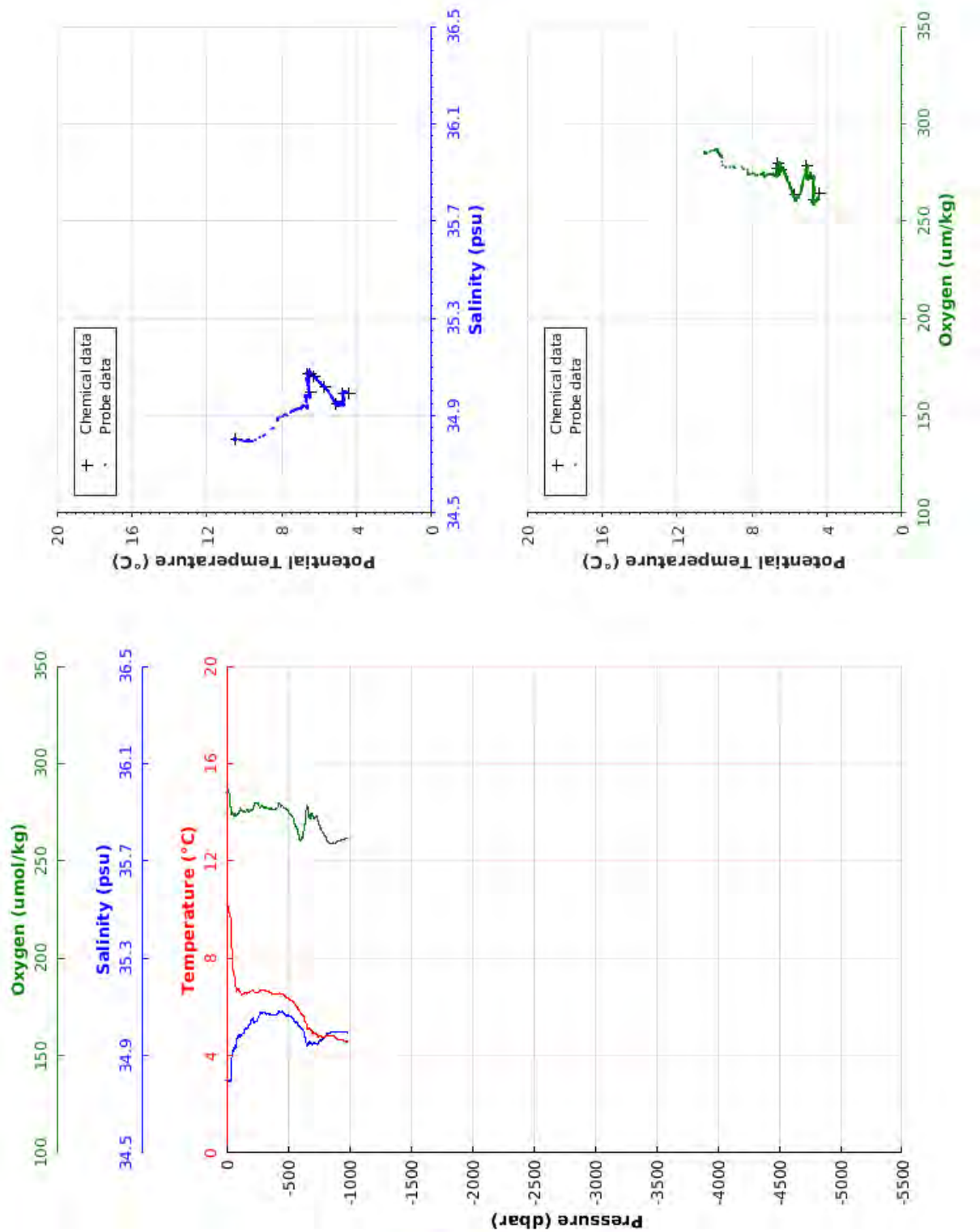
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.252	34.803	288.7	10.252
10.0	10.136	34.800	289.1	10.135
20.0	9.778	34.795	290.6	9.776
30.0	9.695	34.806	287.0	9.691
40.0	9.164	34.823	280.1	9.159
50.0	7.687	34.851	280.0	7.682
100.0	6.357	34.934	275.6	6.348
150.0	7.013	35.100	277.2	6.999
200.0	6.718	35.070	279.6	6.700
250.0	6.631	35.067	281.6	6.609
300.0	6.474	35.045	284.0	6.447
350.0	6.418	35.038	284.9	6.386
400.0	6.394	35.036	284.7	6.358
450.0	6.492	35.060	282.4	6.451
500.0	6.556	35.080	283.4	6.510
550.0	6.603	35.089	282.7	6.552
600.0	6.543	35.081	281.0	6.487
650.0	6.398	35.067	274.1	6.338
700.0	6.149	35.048	271.3	6.085
750.0	5.798	35.022	263.0	5.732
800.0	5.609	35.017	258.7	5.540
850.0	5.182	34.984	262.7	5.110
900.0	4.825	34.940	275.2	4.752
950.0	4.822	34.965	268.7	4.744
1000.0	4.690	34.975	263.4	4.608
1050.0	4.506	34.990	265.9	4.421
1100.0	4.349	34.987	267.9	4.261
1150.0	4.239	34.985	269.3	4.147
1200.0	4.176	34.984	270.2	4.081
1245.0	4.175	34.984	270.5	4.076



Station: 123

Cruise	: BOCATS 2016		
Station	: 124	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 985 m	Organism	: CSIC/IIM VIGO
Position	: N 59 47.99		
	W 029 48.38		

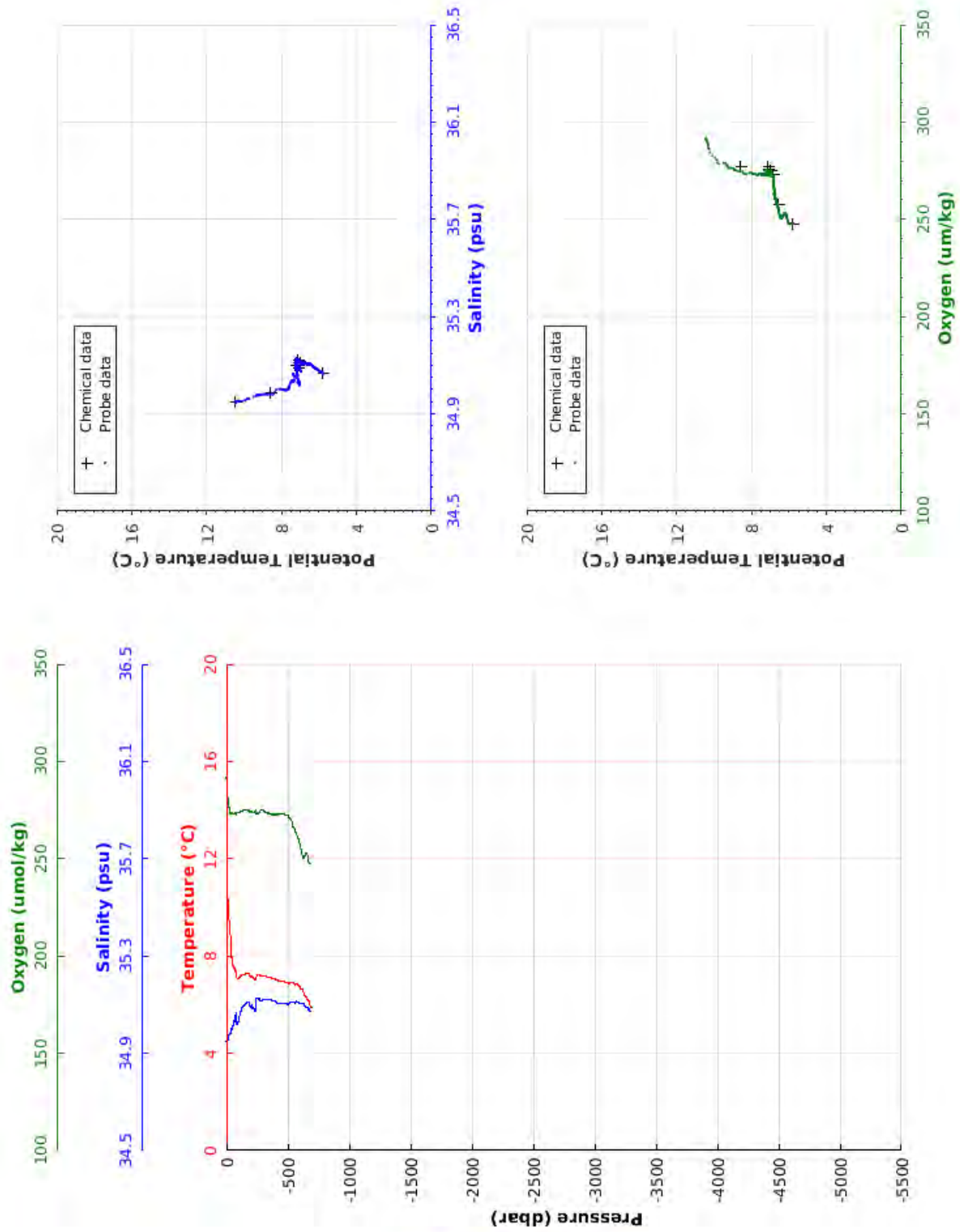
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.539	34.801	285.1	10.539
10.0	10.235	34.800	285.8	10.234
20.0	9.860	34.797	286.4	9.858
30.0	9.720	34.798	283.7	9.716
40.0	8.915	34.822	277.2	8.911
50.0	7.818	34.907	273.7	7.814
100.0	6.704	34.983	274.1	6.694
150.0	6.591	35.010	275.5	6.578
200.0	6.626	35.032	276.1	6.607
250.0	6.574	35.043	279.6	6.551
300.0	6.684	35.075	277.9	6.656
350.0	6.610	35.070	276.9	6.578
400.0	6.517	35.069	276.7	6.480
450.0	6.525	35.078	277.9	6.484
500.0	6.368	35.068	276.0	6.323
550.0	6.182	35.051	271.9	6.133
600.0	5.780	35.019	261.4	5.727
650.0	5.301	34.964	271.8	5.247
700.0	4.945	34.945	274.4	4.888
750.0	4.778	34.954	270.5	4.718
800.0	4.788	34.976	263.2	4.724
850.0	4.830	34.995	259.1	4.761
900.0	4.674	34.997	259.9	4.601
950.0	4.633	34.997	260.7	4.556
989.0	4.545	34.995	262.2	4.465



Station: 124

Cruise	: BOCATS 2016		
Station	: 125	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 697 m	Organism	: CSIC/IIM VIGO
Position	: N 60 14.40		
	W 029 7.74		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.448	34.949	291.6	10.448
10.0	10.344	34.952	289.3	10.343
20.0	9.742	34.963	278.5	9.740
30.0	8.937	34.981	275.7	8.934
40.0	8.033	35.002	274.0	8.029
50.0	7.649	35.003	273.0	7.644
100.0	7.086	35.031	273.6	7.077
150.0	7.259	35.097	274.8	7.245
200.0	7.144	35.091	274.1	7.125
250.0	7.240	35.127	273.0	7.216
300.0	7.189	35.120	275.1	7.160
350.0	7.130	35.121	273.4	7.097
400.0	7.052	35.115	272.5	7.013
450.0	6.957	35.106	273.2	6.914
500.0	6.890	35.102	272.3	6.842
550.0	6.861	35.112	266.1	6.809
600.0	6.706	35.104	258.4	6.650
650.0	6.295	35.089	253.1	6.235
694.0	5.855	35.067	248.1	5.794

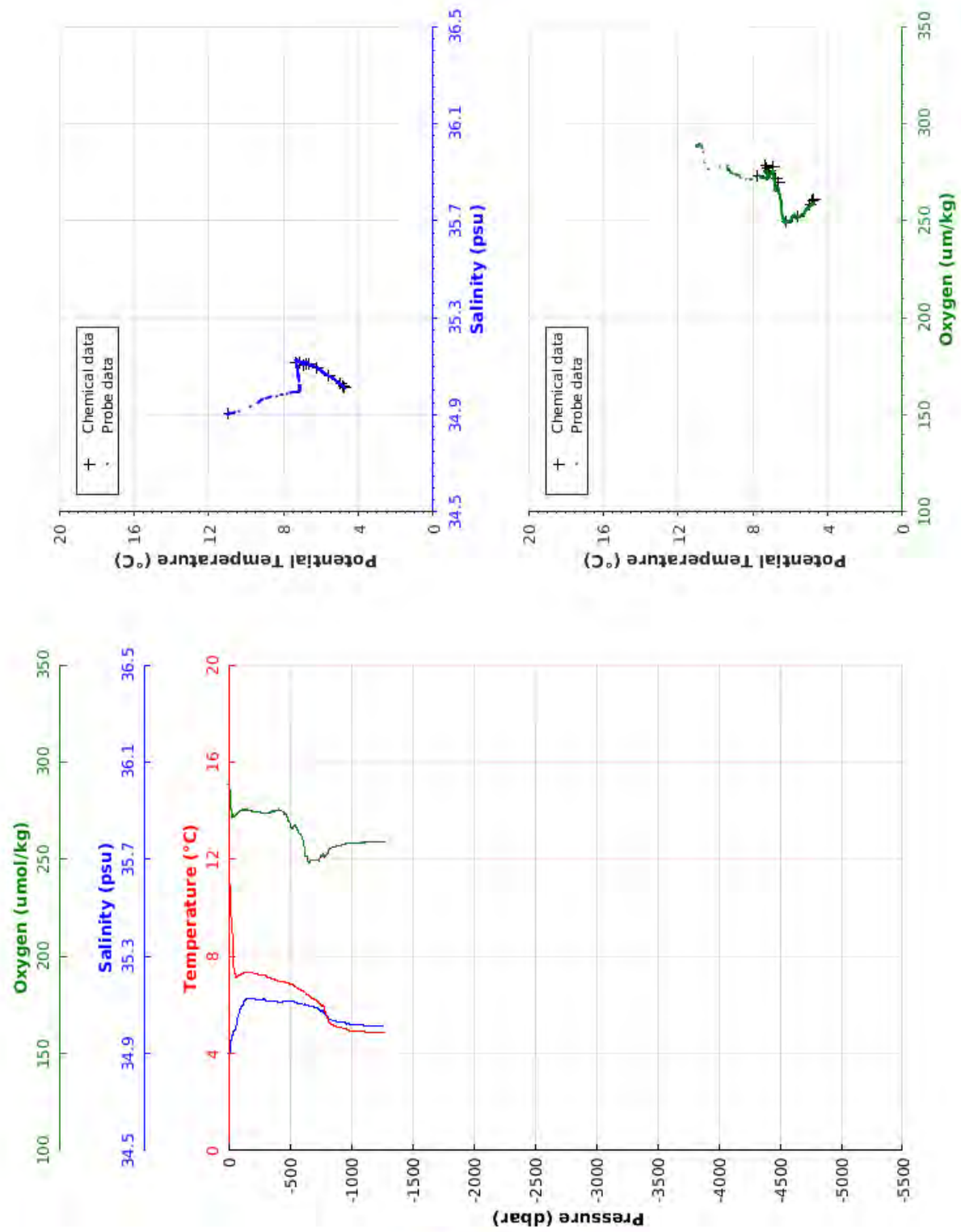


Station: 125



Cruise	: BOCATS 2016		
Station	: 126	Cast	: 1
Date	: 24/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1273 m	Organism	: CSIC/IIM VIGO
Position	: N 60 28.19		
	W 028 46.69		

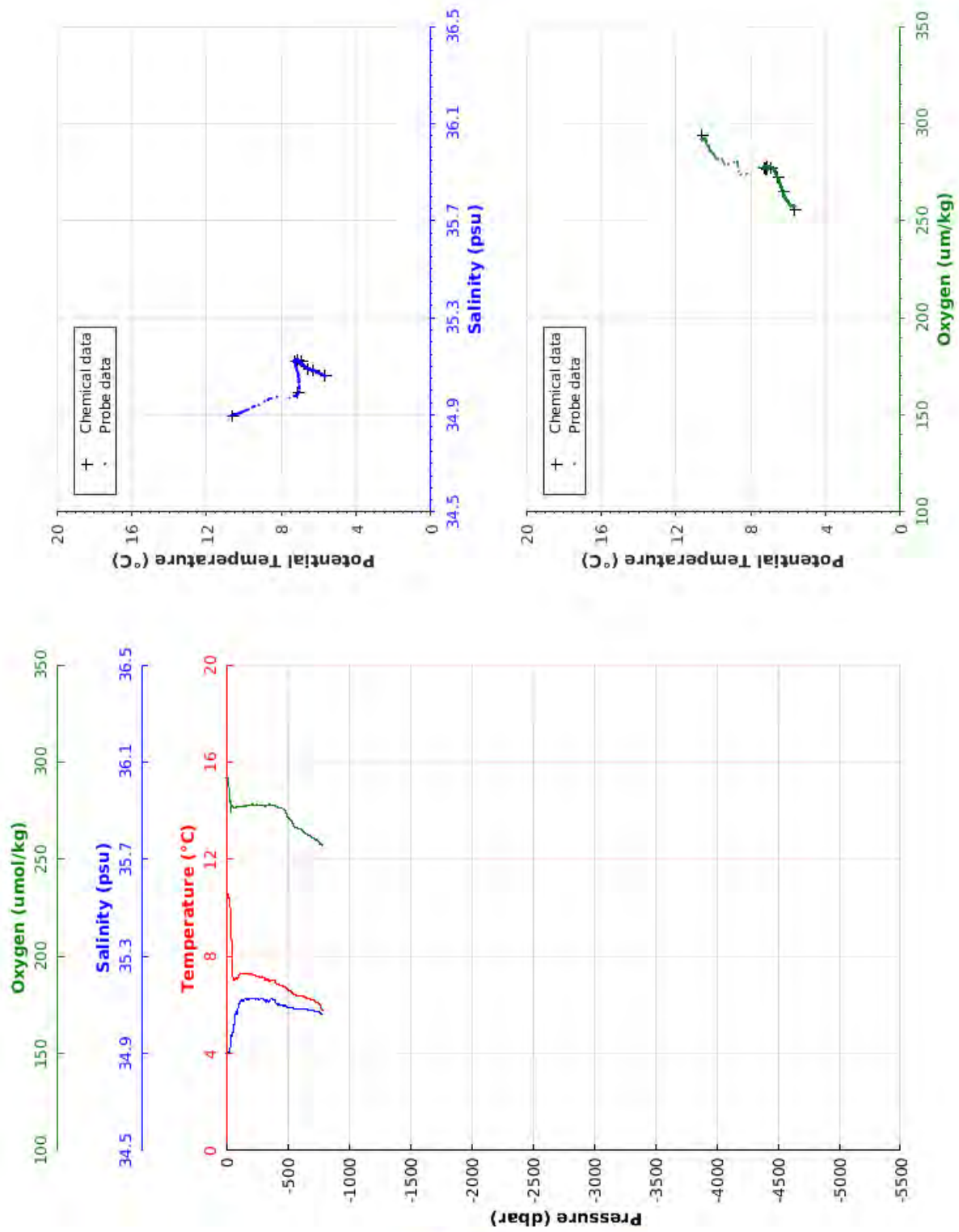
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.008	34.903	288.5	11.008
10.0	10.920	34.908	288.6	10.919
20.0	10.392	34.916	276.6	10.390
30.0	9.114	34.965	274.4	9.111
40.0	7.648	34.992	273.2	7.644
50.0	7.346	34.995	271.9	7.342
100.0	7.269	35.085	274.8	7.260
150.0	7.354	35.123	275.3	7.339
200.0	7.322	35.125	274.6	7.303
250.0	7.242	35.120	274.4	7.218
300.0	7.203	35.122	273.6	7.174
350.0	7.078	35.114	274.1	7.045
400.0	7.006	35.112	275.1	6.967
450.0	6.957	35.114	274.4	6.914
500.0	6.865	35.114	269.5	6.818
550.0	6.754	35.110	267.4	6.703
600.0	6.592	35.104	262.2	6.536
650.0	6.391	35.098	249.7	6.331
700.0	6.217	35.091	249.4	6.153
750.0	6.010	35.079	250.5	5.942
800.0	5.519	35.054	252.4	5.449
850.0	5.168	35.036	256.2	5.096
900.0	5.063	35.029	257.2	4.988
950.0	5.031	35.027	257.5	4.951
1000.0	4.927	35.020	258.6	4.843
1050.0	4.918	35.018	258.4	4.830
1100.0	4.909	35.018	258.5	4.817
1150.0	4.880	35.015	258.9	4.783
1200.0	4.854	35.012	259.0	4.752
1250.0	4.857	35.012	258.9	4.751
1278.0	4.862	35.012	259.3	4.753



Station: 126

Cruise	: BOCATS 2016		
Station	: 127	Cast	: 1
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 796 m	Organism	: CSIC/IIM VIGO
Position	: N 60 35.95		
	W 028 34.75		

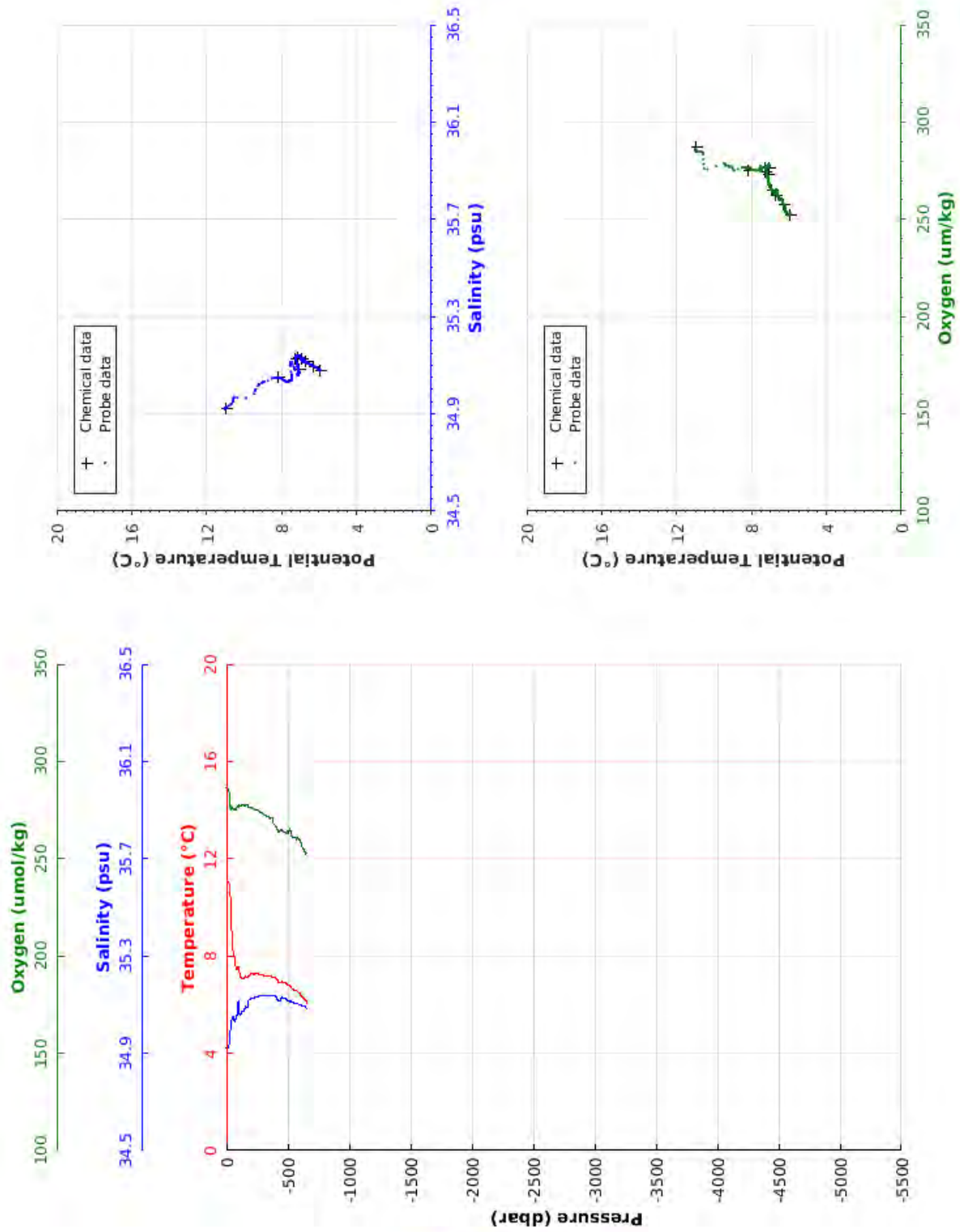
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.618	34.899	292.0	10.618
10.0	10.614	34.899	291.8	10.613
20.0	10.392	34.903	291.5	10.389
30.0	10.115	34.911	285.3	10.112
40.0	8.894	34.956	280.2	8.890
50.0	7.207	34.977	277.8	7.203
100.0	7.186	35.088	276.9	7.177
150.0	7.308	35.123	277.2	7.294
200.0	7.259	35.124	277.8	7.240
250.0	7.195	35.125	278.0	7.171
300.0	7.134	35.127	277.8	7.105
350.0	6.992	35.111	277.9	6.959
400.0	6.955	35.117	277.5	6.917
450.0	6.811	35.100	276.3	6.769
500.0	6.640	35.090	272.6	6.594
550.0	6.459	35.086	268.1	6.408
600.0	6.379	35.084	265.7	6.324
650.0	6.310	35.082	263.3	6.250
700.0	6.197	35.078	261.4	6.133
750.0	6.098	35.074	259.7	6.030
793.0	5.745	35.061	257.6	5.675



Station: 127

Cruise	: BOCATS 2016			
Station	: 128	Cast	: 1	
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 660 m	Organism	: CSIC/IIM VIGO	
Position	: N 60 54.17			
	W 028 7.06			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.023	34.921	286.2	11.023
10.0	11.029	34.921	285.9	11.028
20.0	10.985	34.924	285.7	10.982
30.0	10.558	34.965	278.4	10.555
40.0	9.206	35.020	277.1	9.201
50.0	8.304	35.049	276.7	8.299
100.0	7.520	35.112	277.2	7.510
150.0	7.114	35.081	277.5	7.100
200.0	7.263	35.124	276.2	7.243
250.0	7.261	35.134	275.2	7.237
300.0	7.207	35.136	273.3	7.178
350.0	7.167	35.138	271.5	7.133
400.0	7.093	35.137	267.0	7.055
450.0	6.937	35.129	264.9	6.894
500.0	6.807	35.116	264.2	6.760
550.0	6.617	35.108	261.1	6.565
600.0	6.419	35.099	259.6	6.364
650.0	6.147	35.088	252.6	6.088
656.0	6.007	35.080	252.5	5.948

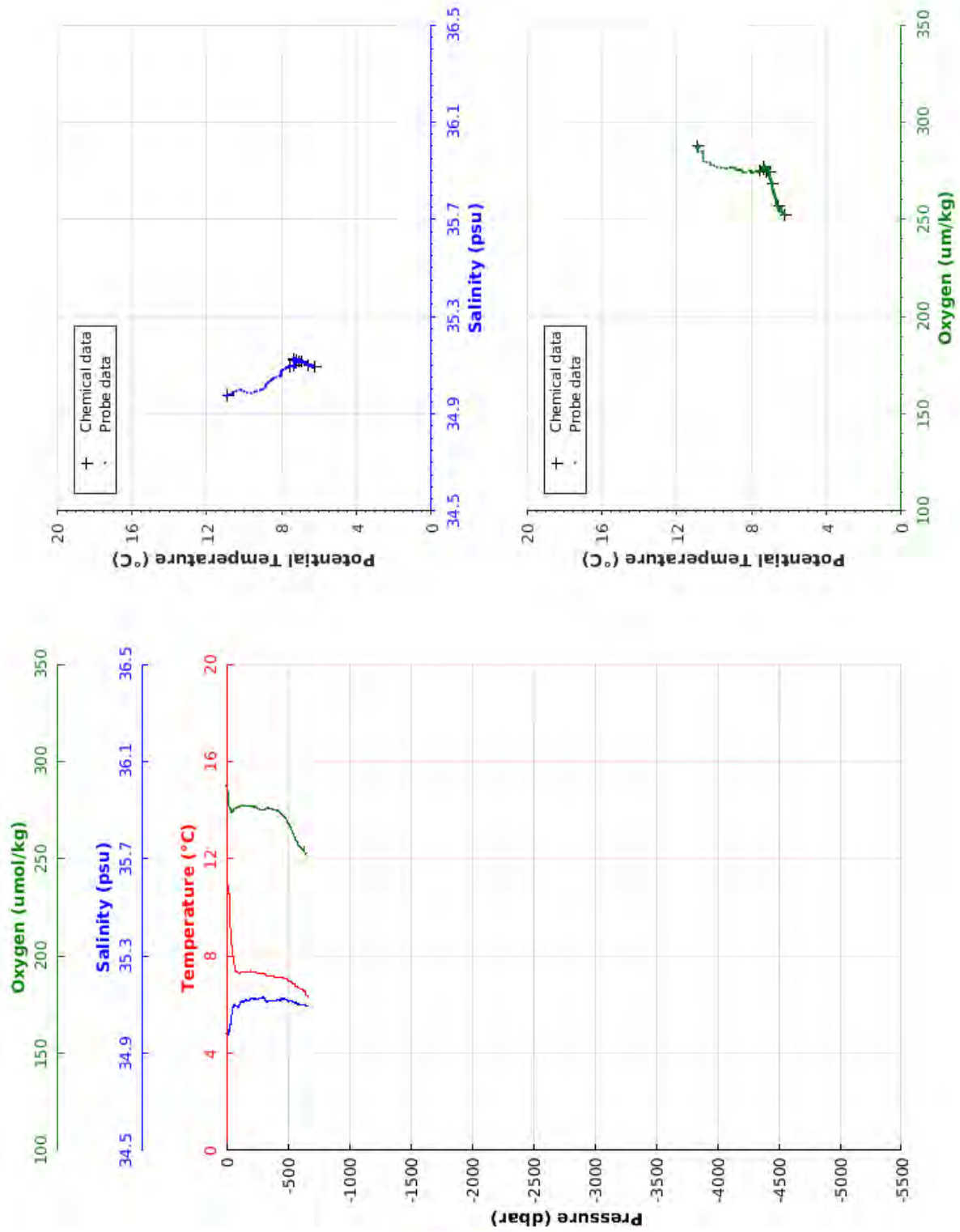


Station: 128



Cruise	: BOCATS 2016		
Station	: 129	Cast	: 1
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 678 m	Organism	: CSIC/IIM VIGO
Position	: N 61 12.08		
	W 027 39.53		

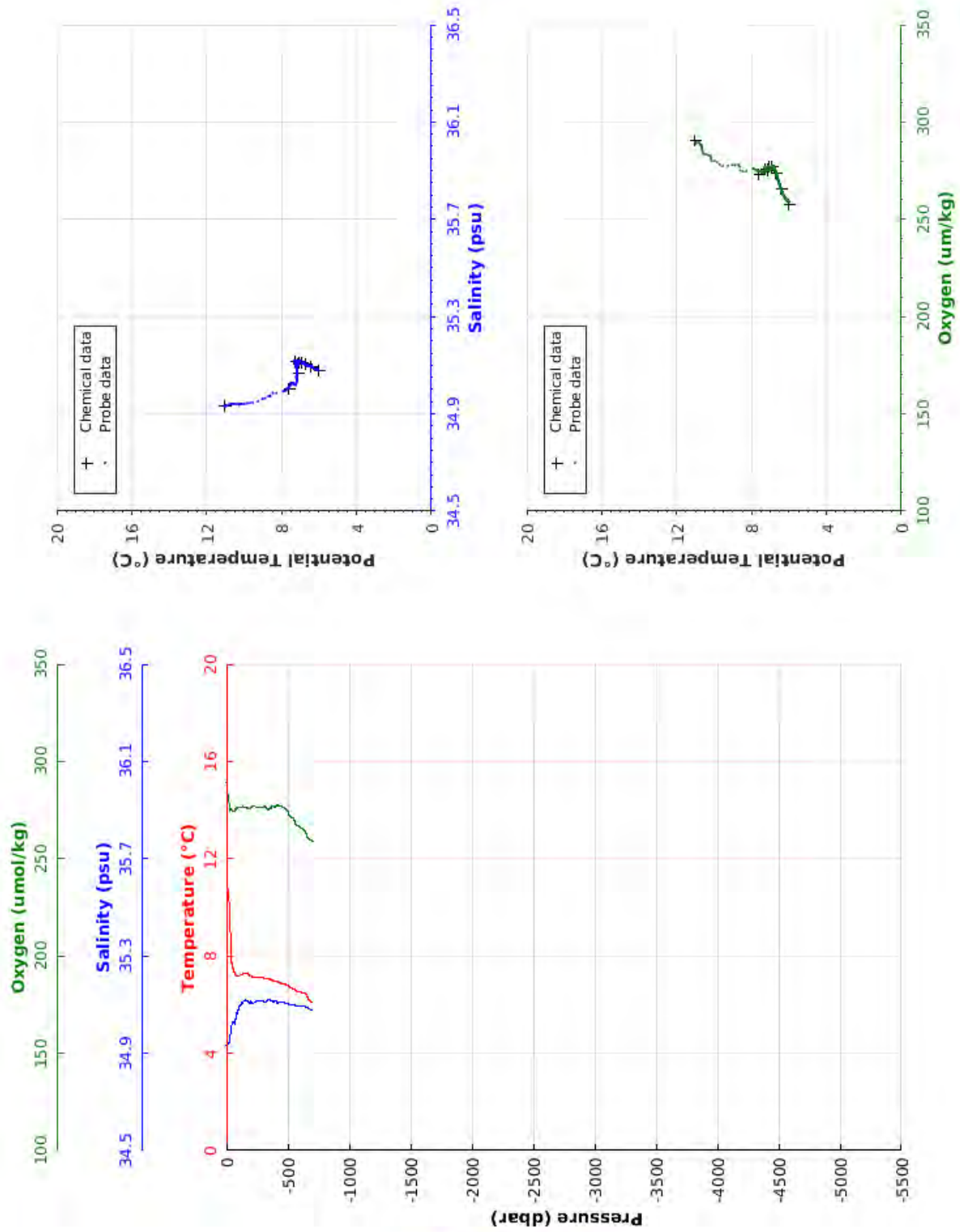
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.879	34.979	287.9	10.879
10.0	10.806	34.977	287.5	10.804
20.0	10.589	34.986	282.7	10.586
30.0	9.337	34.993	276.1	9.333
40.0	8.560	35.040	275.3	8.556
50.0	8.035	35.070	274.7	8.030
100.0	7.290	35.091	276.7	7.281
150.0	7.342	35.116	277.4	7.328
200.0	7.371	35.127	276.9	7.352
250.0	7.309	35.122	276.2	7.285
300.0	7.291	35.129	274.8	7.262
350.0	7.182	35.113	275.8	7.148
400.0	7.133	35.117	275.0	7.095
450.0	7.125	35.125	273.0	7.081
500.0	6.989	35.113	269.3	6.941
550.0	6.846	35.110	263.1	6.794
600.0	6.657	35.101	256.2	6.601
650.0	6.381	35.094	252.4	6.321
675.0	6.310	35.092	253.0	6.248



Station: 129

Cruise	: BOCATS 2016		
Station	: 130	Cast	: 1
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 714 m	Organism	: CSIC/IIM VIGO
Position	: N 61 29.93		
	W 027 10.53		

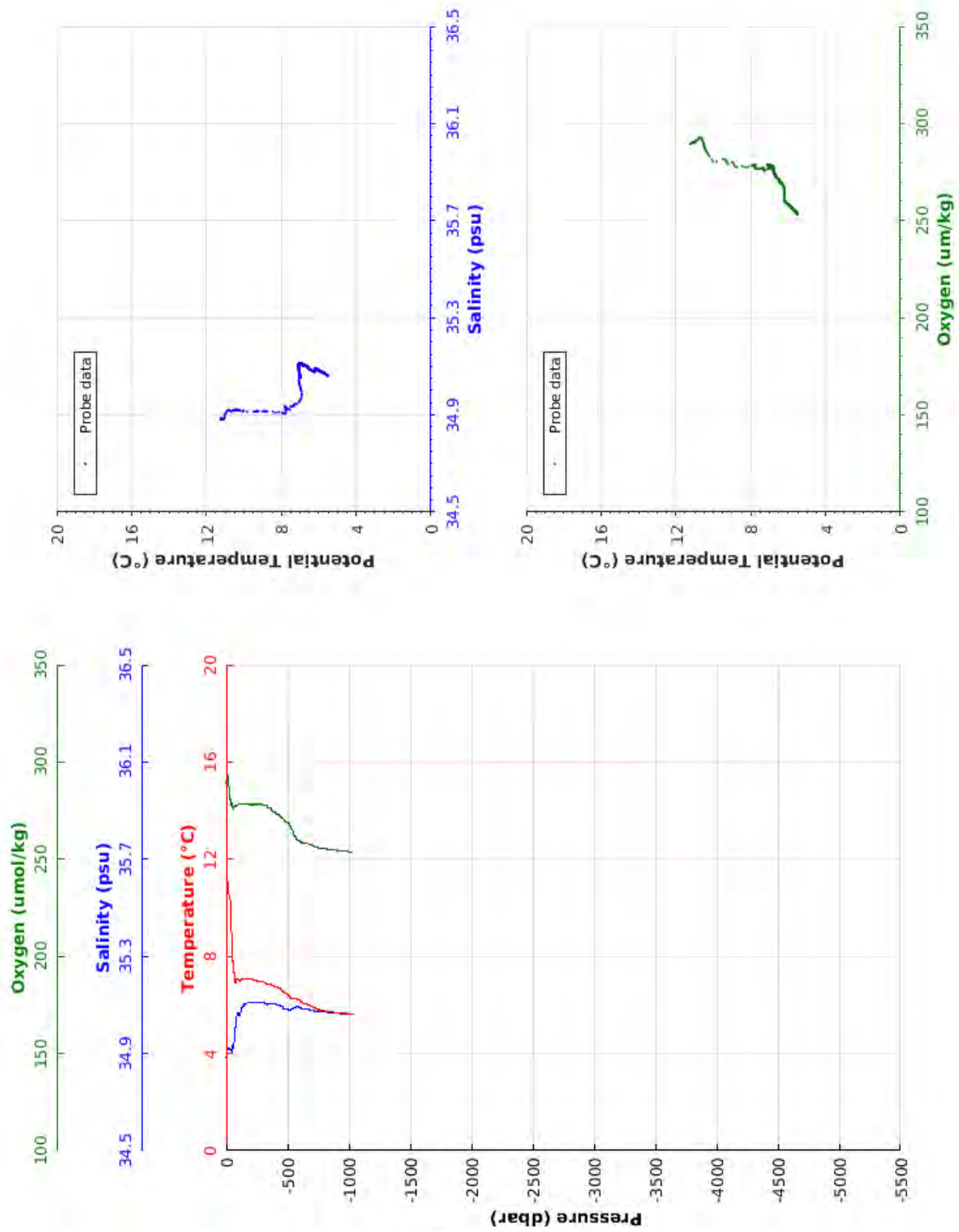
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.023	34.933	289.4	11.023
10.0	10.797	34.938	289.4	10.796
20.0	10.297	34.939	283.0	10.295
30.0	9.252	34.951	277.6	9.248
40.0	7.805	34.998	275.6	7.801
50.0	7.522	35.022	274.7	7.517
100.0	7.185	35.077	276.2	7.176
150.0	7.291	35.116	276.7	7.277
200.0	7.202	35.113	275.6	7.183
250.0	7.140	35.115	276.5	7.116
300.0	7.098	35.114	276.5	7.069
350.0	7.059	35.119	275.6	7.026
400.0	6.974	35.114	276.8	6.936
450.0	6.862	35.110	276.9	6.820
500.0	6.783	35.105	275.1	6.736
550.0	6.650	35.098	270.6	6.598
600.0	6.522	35.095	266.4	6.466
650.0	6.393	35.091	263.4	6.333
700.0	6.126	35.080	259.3	6.063
712.0	6.091	35.078	259.4	6.027



Station: 130

Cruise	: BOCATS 2016		
Station	: 131	Cast	: 1
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 1043 m	Organism	: CSIC/IIM VIGO
Position	: N 61 47.98 W 026 41.49		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.217	34.884	289.4	11.217
10.0	11.053	34.887	290.3	11.052
20.0	10.623	34.918	291.7	10.621
30.0	10.379	34.923	285.7	10.376
40.0	9.283	34.917	279.8	9.279
50.0	7.853	34.905	278.7	7.848
100.0	7.039	35.067	278.1	7.030
150.0	7.082	35.101	278.6	7.068
200.0	7.056	35.112	278.2	7.037
250.0	6.996	35.111	278.3	6.972
300.0	6.948	35.109	278.1	6.919
350.0	6.838	35.105	276.7	6.805
400.0	6.773	35.104	274.4	6.736
450.0	6.626	35.095	271.7	6.584
500.0	6.401	35.082	269.3	6.355
550.0	6.263	35.085	264.4	6.214
600.0	6.203	35.091	259.4	6.148
650.0	6.038	35.083	258.4	5.980
700.0	5.933	35.079	257.3	5.871
750.0	5.806	35.073	256.1	5.740
800.0	5.760	35.071	255.5	5.689
850.0	5.707	35.068	255.1	5.632
900.0	5.687	35.067	254.8	5.607
950.0	5.645	35.064	254.2	5.561
1000.0	5.641	35.063	253.9	5.552
1045.0	5.622	35.062	253.7	5.528

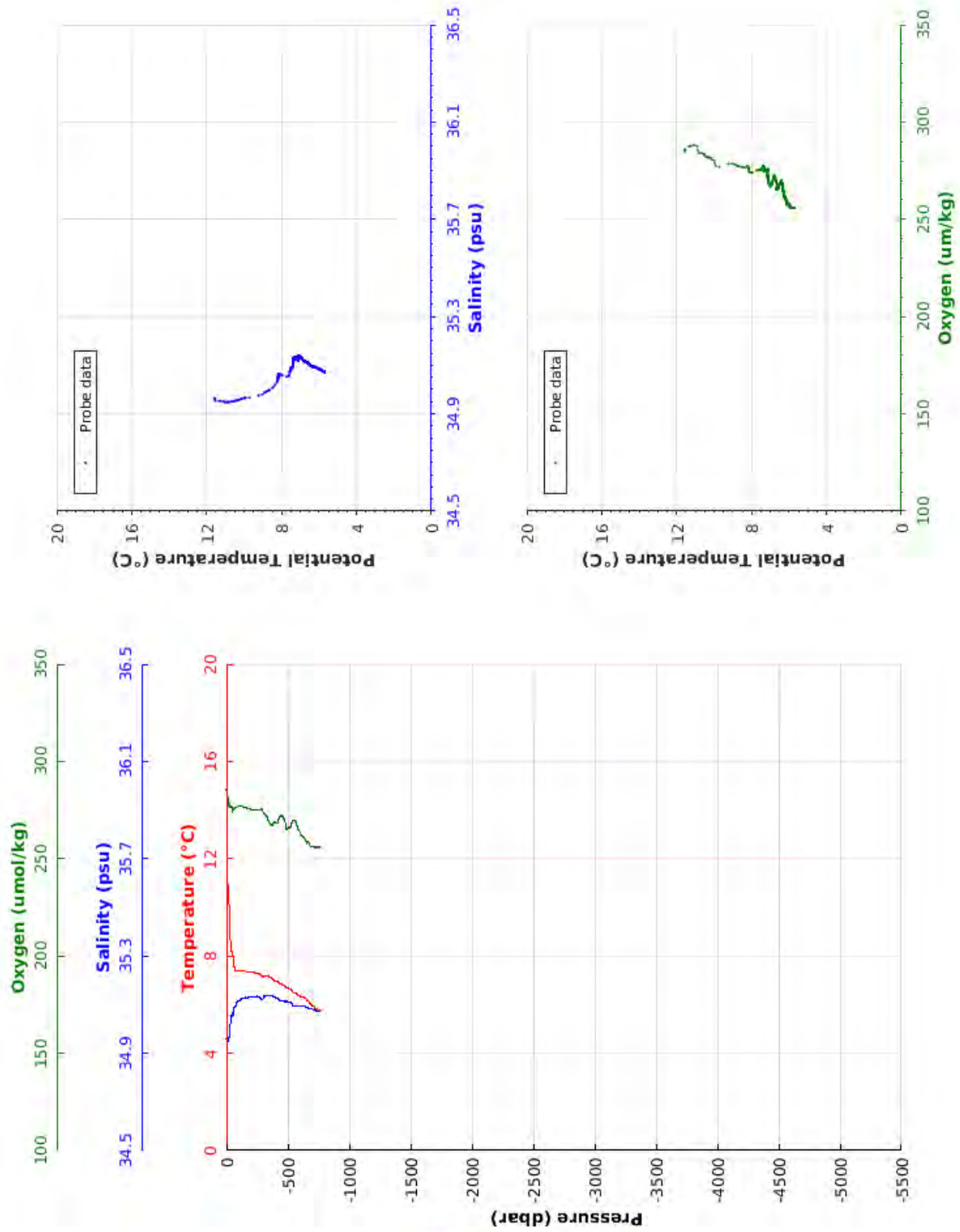


Station: 131



Cruise	: BOCATS 2016		
Station	: 132	Cast	: 1
Date	: 25/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 776 m	Organism	: CSIC/IIM VIGO
Position	: N 62 6.00		
	W 026 12.32		

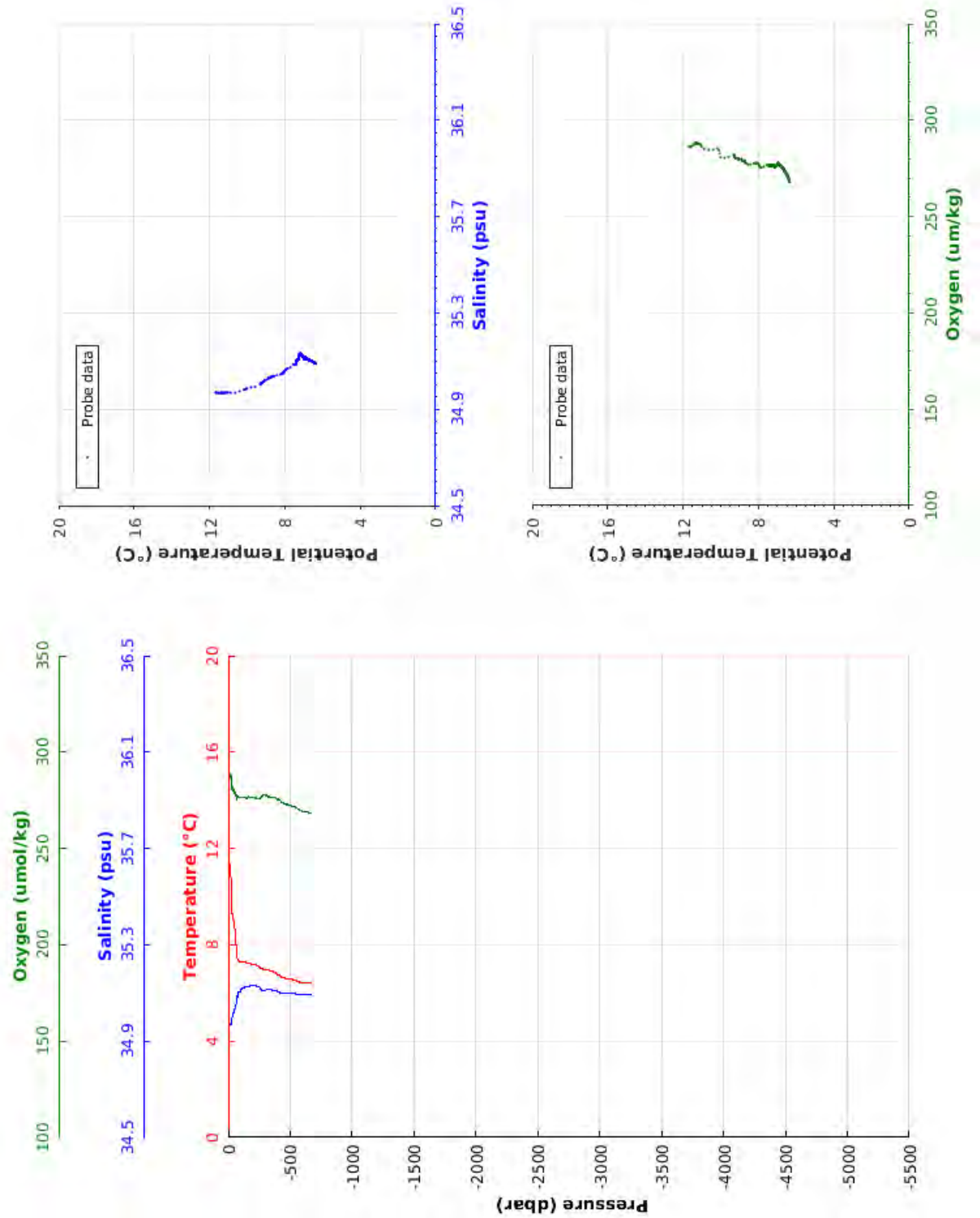
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.553	34.961	285.7	11.553
10.0	11.011	34.948	287.9	11.010
20.0	10.180	34.961	281.4	10.177
30.0	8.780	34.993	277.6	8.776
40.0	8.193	35.043	277.0	8.189
50.0	8.156	35.063	275.8	8.151
100.0	7.377	35.114	276.9	7.367
150.0	7.373	35.128	276.6	7.358
200.0	7.331	35.131	275.7	7.312
250.0	7.286	35.134	274.9	7.262
300.0	7.151	35.122	275.1	7.122
350.0	7.140	35.137	269.2	7.107
400.0	6.975	35.129	268.9	6.937
450.0	6.840	35.117	272.2	6.798
500.0	6.672	35.112	265.5	6.625
550.0	6.475	35.096	269.8	6.425
600.0	6.347	35.095	264.0	6.292
650.0	6.227	35.091	260.1	6.168
700.0	5.972	35.081	256.2	5.910
750.0	5.794	35.073	255.9	5.728
774.0	5.782	35.072	255.8	5.713



Station: 132

Cruise	: BOCATS 2016		
Station	: 133	Cast	: 1
Date	: 26/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 681 m	Organism	: CSIC/IIM VIGO
Position	: N 62 23.99 W 025 43.33		

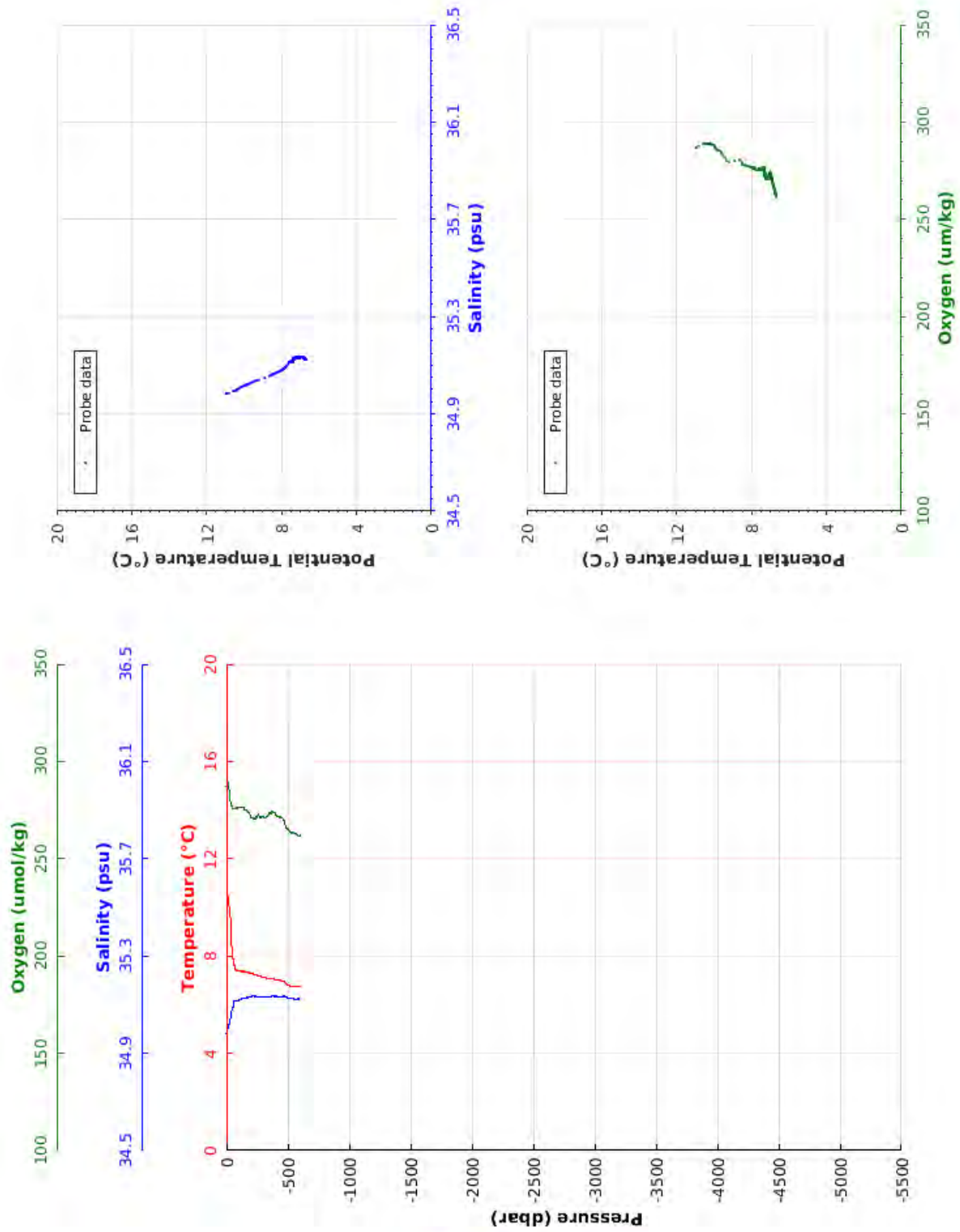
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.651	34.969	286.3	11.651
10.0	11.356	34.968	288.4	11.355
20.0	11.017	34.970	286.3	11.014
30.0	9.314	35.005	282.2	9.311
40.0	9.096	35.018	280.3	9.091
50.0	8.714	35.035	279.0	8.709
100.0	7.280	35.113	276.4	7.270
150.0	7.242	35.124	276.7	7.228
200.0	7.195	35.131	276.3	7.176
250.0	7.119	35.124	276.1	7.095
300.0	6.975	35.109	277.6	6.947
350.0	6.903	35.113	276.5	6.870
400.0	6.764	35.105	275.4	6.727
450.0	6.641	35.101	273.3	6.599
500.0	6.572	35.098	272.3	6.526
550.0	6.518	35.095	271.2	6.467
600.0	6.439	35.093	269.2	6.383
650.0	6.422	35.092	268.6	6.362
678.0	6.414	35.092	268.2	6.351



Station: 133

Cruise	: BOCATS 2016			
Station	: 134	Cast	: 1	
Date	: 26/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 610 m	Organism	: CSIC/IIM VIGO	
Position	: N 62 41.99			
	W 025 14.23			

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.947	34.982	287.0	10.946
10.0	10.481	34.996	288.8	10.480
20.0	10.138	35.011	288.4	10.136
30.0	9.635	35.028	284.5	9.631
40.0	8.511	35.062	278.6	8.507
50.0	7.970	35.082	276.6	7.965
100.0	7.392	35.116	276.4	7.382
150.0	7.354	35.128	276.0	7.340
200.0	7.301	35.132	272.4	7.281
250.0	7.212	35.133	271.4	7.188
300.0	7.103	35.130	271.6	7.075
350.0	7.091	35.131	272.6	7.057
400.0	7.033	35.135	273.4	6.995
450.0	6.983	35.134	271.3	6.940
500.0	6.827	35.128	265.4	6.780
550.0	6.771	35.125	263.4	6.719
600.0	6.746	35.124	261.9	6.689
608.0	6.746	35.124	261.8	6.688

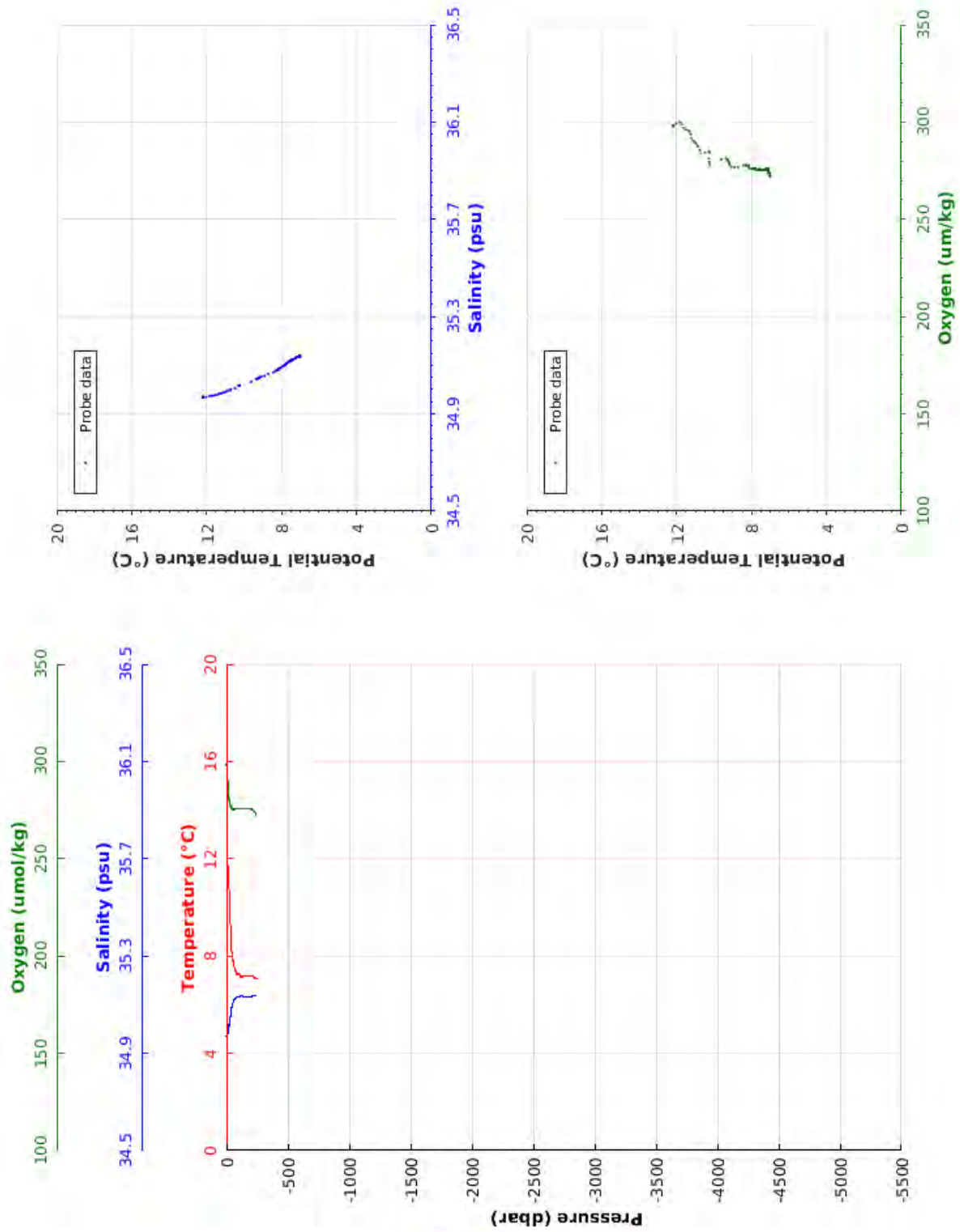


Station: 134



Cruise	: BOCATS 2016			
Station	: 135	Cast	: 1	
Date	: 26/07/2016	Ship	: B/O Sarmiento de Gamboa	
Depth	: 258 m	Organism	: CSIC/IIM VIGO	
Position	: N 63 0.01			
	W 024 45.13			

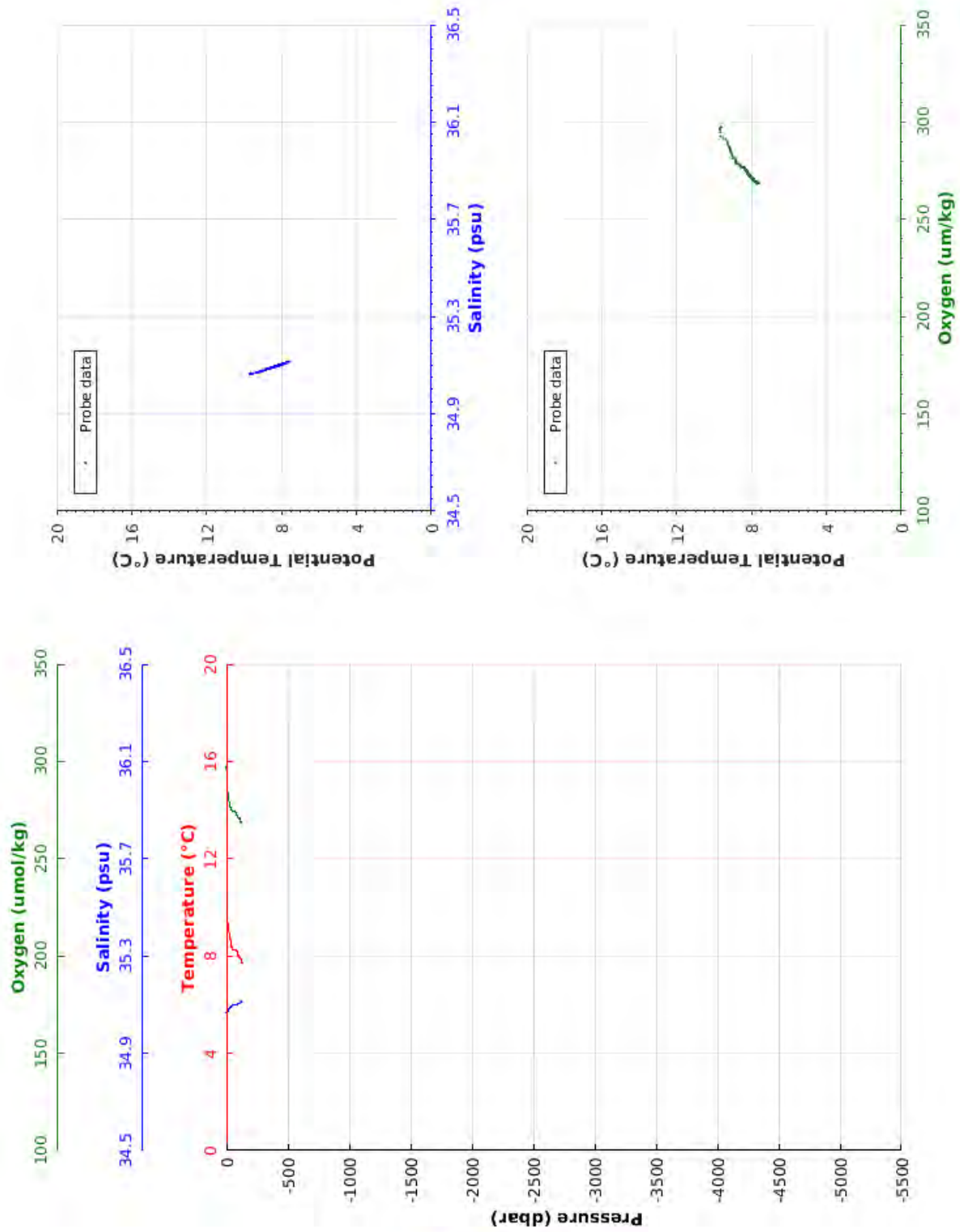
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.193	34.970	298.5	12.193
10.0	11.738	34.975	298.8	11.736
20.0	10.866	34.995	287.6	10.864
30.0	9.373	35.043	281.3	9.369
40.0	8.320	35.077	277.9	8.316
50.0	7.878	35.098	276.0	7.873
100.0	7.242	35.131	275.9	7.233
150.0	7.156	35.134	275.6	7.142
200.0	7.180	35.133	275.4	7.161
250.0	7.038	35.137	272.4	7.015
251.0	7.036	35.137	272.3	7.012



Station: 135

Cruise	: BOCATS 2016		
Station	: 136	Cast	: 1
Date	: 26/07/2016	Ship	: B/O Sarmiento de Gamboa
Depth	: 143 m	Organism	: CSIC/IIM VIGO
Position	: N 63 24.99 W 023 55.03		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.643	35.066	297.3	9.643
10.0	9.379	35.070	291.0	9.377
20.0	9.023	35.077	282.3	9.021
30.0	8.735	35.086	278.6	8.732
40.0	8.408	35.093	276.5	8.404
50.0	8.272	35.097	275.3	8.267
100.0	7.974	35.104	271.0	7.964
133.0	7.649	35.115	268.9	7.636



Station: 136