From: Sallee, Jean-Baptiste B.
To: Wallace, Margaret I.
Subject: RE : JC054 and JR276 CTD data
Date: 08 August 2011 10:12:54

Dear Mags,

it was indeed good to meet you and see your talk in Cambridge. Sorry for the late reply. Here is a detailed description of the fields of the matrices I provided to Katy.
First a small clarification: I was in charge of the hydrography data (lead on the ship and post-cruise calibration) for JC054 (i.e. DIMES UK2) and JR276 (i.e. DIMES UK2.5). From these two cruises I produced the two files UK2_Sections.mat and UK25_Sections.mat. I know exactly what was done to these data (because I did it) and the entire calibration procedure is explain in the two cruise reports. In order to have comparable data format for different DIMES cruise, I also produce the file DIMES_hydrography_us1_uk1_uk2_uk25.mat, which is a concatenation of the 4 cruises: US1, UK1, UK2, UK2.5. The data for UK2 and UK2.5 are exactly the same as in UK2_Sections.mat and UK25_Sections.mat (although some variable are not present, e.g. pdens0, etc.). The data for US1 and UK1 have been obtained respectively on the US DIMES website and from Peggy Courtois. I do not know what calibrations have been applied for these cruises. I only wanted to have a common format but could not reprocess everything. If you want details about the calibration of UK1 and US1, I would recommend to contact Alberto and Jim to ask who was in charge.

Now, for the file content:

UK2_Sections.mat contains 4 structures S0, S1, S2, and Grid, which correspond to the four sections done during the cruise. I divided the profiles in these four structure to ease the analysis (e.g. easier to plot) but each of these structures contains profiles from the same cruise and have been treated exactly the same way (see cruise report).
Similarly UK25_Sections.mat contains structures S3 and SR1 corresponding to the two section done in UK2.5, which comprise the same variables.

Each of the structure contains the following variables:
time = averaged time at which the profile has been sampled, in julian day reference to Jan-1-0000 (time=1 correspond to Jan-1-0000).
press = pressure in dbar from SBE35
lon = averaged longitude where the profile has been sampled, in degree east.
lat = averaged latitude where the profile has been sampled, in degree north.
psal = practical salinity from SBE35 (calibrated against bottle salinity)
ptemp = potential temperature in degree C reference to ocean surface computed from calibrated temperature, pressure and salinity (originally from SBE35) using sw_ptmp.m (UNESCO, 1983)
pdens0 = potential density reference to ocean surface computed from calibrated temperature, pressure and salinity (originally from SBE35) using sw_pden.m
gamma = neutral density computed from calibrated temperature, pressure and salinity (originally from SBE35) using the Fortran/matlab routine gamma_n.m provided by Trevor McDougall and David Jackett (see: http://www.marine.csiro.au/~jackett/NeutralDensity/)

DIMES_hydrography_us1_uk1_uk2_uk25.mat contains structures UK1, UK2, UK25 and US1, which correspond to the profiles of the four DIMES cruises UK1, UK2, UK2.5, US1.
Each of the structure contains the following variables:
temperature = temperature in degree C
salinity = practical salinity
pressure = pressure in dbar
longitude = averaged longitude where the profile has been sampled, in degree east.
latitude = averaged latitude where the profile has been sampled, in degree north.
time = averaged time at which the profile has been sampled, in julian day reference to Jan-1-0000 (time=1 correspond to Jan-1-0000).

Data from JC054 and JC046 have been calibrated against bottle data. However, for JC054, no correction have been applied because no correction was needed, as said in the cruise report. But they are calibrated.
Auxiliary sensors have not been processed. Because of the work done for the tracer, we chose to not sample for oxygen, for instance. I can provide you with other data, e.g. oxygen but these data

are not usable.
Please let me know if you need any other info.

Cheers,
JB

De : Wallace, Margaret I.
Date d'envoi : mardi 2 août 2011 10:23
À : Sallee, Jean-Baptiste B.
Objet : JC054 and JR276 CTD data

Dear Jean-Baptiste

It was nice to meet you at the DIMES meeting the other week. As I mentioned in Cambridge, I've received the CTD data from Katy Sheen. Can you please clarify the file contents for me when you get the chance? I've listed the files and variables below, so would be grateful if you could provide brief definitions of the form 'temp = temperature in degC, calibrated against SBE35 thermometer', 'pdens0 = potential density in kg/m^3, derived from calibrated temperature and salinity using sw_pden' etc. I'm afraid we do require you to state the glaringly obvious as it ensures that we don't make any incorrect assumptions. Can you please also provide detail of the processing? If it is all explained in the cruise report and no additional processing was undertaken then please let me know and we will refer to the report for our documentation.

UK2_Sections.mat
Contains structures S0, S1, S2 and Grid, each of which contains the following variables:
time
press
lon
lat
psal
ptemp
pdens0
gamma

UK25_Sections.mat contains structures S3 and SR1 which comprise the same variables.

DIMES_hydrography_us1_uk1_uk2_uk25.mat contains structures UK1, UK2, UK25 and US1, each containing variables:
temperature
salinity
pressure
longitude
latitude
time

How does this file relate to the individual cruise files? It looks like the structures in this file are concatenations of the various sections from each cruise, but it contains temp while the individual cruise files above (UK2_Sections and UK25_Sections) contain potemp, pdens etc. Is that correct?

Station numbers are listed in the cruise report but are missing from the data files. Is this information stored anywhere or do we need to match up stations with data using times and

positions recorded in the cruise report? Table 4.1 contains this info for JC054 but we don't currently have such information for JR276, so if you have access to that information I would be grateful if you could send it on.

I gather from the cruise report that the JC054 data at least were not calibrated against salinity samples. However, if those sample data are available, we can archive them at BODC too. As yet, I we haven't seen the JR276 cruise report so I don't know what processing was applied to those data, but if you have that information (and any bottle samples) can you please send it on to me?

Finally, I also see from the JC054 cruise report that auxiliary sensors were deployed on the CTD. Were these data processed at all/is there any intention to process them? Do you know anything about auxiliary sensors from JR276?

Thank you very much in advance for your help and please don't hesitate to get in touch if you have any questions.

Best wishes,
Mags