

## Report of VALDIVIA cruise 152

### A. Cruise narrative

Ship: Valdivia

Cruise number: 152  
Expocode: 06AZ152

Cruise dates: start on 26 May 1995 in Hamburg (Germany),  
end on 23 June 1995 in Cork (Ireland).

Chief scientist: Manfred Bersch,  
Institute of Oceanography,  
University of Hamburg  
Tropelwitzstr. 7  
22529 Hamburg, Germany.

Scientific objective: hydrographic repeat of WOCE section A1E/AR7E and recovering of 4 moorings.

Cruise track: Hamburg - English Channel - Porcupine Bank - Southwestern slope of Rockall Plateau - Iceland Basin - Reykjanes Ridge at 59 N - Irminger Sea - Cape Farvel - Reykjanes Ridge at 57 N - Cork

Total number of stations: 73, consisting of 4 mooring stations and 69 CTD/rosette stations.

Moorings: 4 recovered, with 15 current meters.

<b>Cruise participants:</b>		
Name	Institute	Responsibility
Manfred Bersch	IfM	chief scientist
Randi Eichholz	IfM	CTD
Joerg Feldt	IfM	salinometer, CTD
Kerstin Grotefendt	IfM	CTD
Ines Koeper	BSH	oxygen
Rita Kramer	BSH	nutrients
Wolfgang Lange	BSH	moorings
Anita Leinweber	IfM	CTD
Uwe Paul	BSH	CTD
Franziska Schmiel	IfM	oxygen
Klaus Schulze	IfM	CTD
Helmut Wuellner	IfM	moorings

BSH: Bundesamt fuer Seeschiffahrt und Hydrographie,  
Bernhard-Nocht-Str. 78, 20359 Hamburg, Germany

IfM: Institut fuer Meereskunde der Universitaet  
Hamburg, Troplowitzstr. 7, 22529 Hamburg,  
Germany

Notes:

- Stations No. 1 to 57 were located along WOCE section A1E/AR7E.
- Due to sea-ice conditions 2 planned CTD/rosette stations on the Greenlandic shelf were cancelled and another 3 stations above the slope had to be shifted to the south.
- Due to good weather conditions during the cruise the reserve of ship time was used to run an additional section of 16 CTD/rosette stations in the Irminger Sea (stations No. 58 to 73). The additional section did not coincide with any WOCE section.

## **B. Measurement techniques**

CTD: Seabird 911 plus. Continuous profiles of pressure, temperature, conductivity, and oxygen down to about 20 m above the sea bottom. The sample frequency is 24 Hz. Downcast velocities were between 0.5 and 1.0 m/s. The sensors are regularly calibrated in the laboratory.

ROS: Seabird rosette. At each CTD station water samples from up to 12 different depths were taken during the upcast for the determination of salinity and concentrations of dissolved oxygen, phosphate, nitrate, and silica.

Altimeter: The CTD/rosette was equipped with an altimeter, measuring the distance to the sea bottom.

Mechanical thermometers: Gohla reversing thermometers. Fixed to selected water bottles of the rosette for the determination of temperature and pressure at different depths.

Analysis of water samples:

salinity: Guildline Autosal salinometer, using standard seawater.

oxygen: Winkler titration with Metrohm processor 686.

phosphate, nitrate, silica: Skalar autoanalyzer.

Navigation: Global Positioning System (GPS).

Bottom depth: ELAC echo-sounder.

Moorings: 4 moorings recovered with 15 Aanderaa current meters RCM 5, 7, and 8.

Parameters: pressure, temperature, conductivity, current speed and direction.

ID Position (deg.,min.)

Sampling Depths (m) A4 59 9.1 N 34 0.0 W 269, 882, 2092, 2551 D4 57 34.0 N 28 9.6 W 542, 1752, 2211, E4 54 25.3 N 25 53.5 W 439, 1041, 2243, 3095 F4 52 23.2 N 15 28.5 W 853, 1255, 2057, 2504

Notes:

- 3 CTD/rosette casts were run for test and calibration purposes.
- The two upper current meters of mooring F4 had been lost probably due to fishery activities.
- Due to cable and electronic defects the shipmounted Acoustic Doppler Current Profiler (ADCP) could not be used.