



Universität Hamburg  
Institut für Meereskunde

**Cruise Report**  
**Alexander von Humboldt 44/02/05**  
**Rostock - Reykjavik, 25.06. - 23.08.2002**

## **1. Scientific objectives**

The cruise was part of the Climate Variability And Predictability (CLIVAR) project of the World Climate Research Programme (WCRP) and was performed by the Institute of Oceanography of the University of Hamburg, Germany. The cruise contributes to the investigation of interannual to decadal changes of the circulation in the northern North Atlantic Ocean. During leg 1 of the cruise hydrographic measurements were carried out along the WOCE section A1E/AR7E (Greenland-Ireland), which were occupied since 1991 with a frequency of 1 to 2 years. During leg 2 of the cruise meridional hydrographic sections were run across the North Atlantic Current between 22 and 35 °W to obtain the spatial distribution of the water masses and the course of the Subarctic Front. The measurements will be repeated in the summer of 2004 and compared to the previous measurements in this region to study the temporal changes of the thermohaline circulation in relationship to the North Atlantic Oscillation.

## **2. Narrative of the cruise**

Master of the RV *Alexander von Humboldt* on the cruise was Gerhard Herzig. The ship left Rostock on June 25<sup>th</sup> in the afternoon after a preliminary test of the CTD system. A test station was occupied on June 30<sup>th</sup> west of Ireland. After a modification of the suspension of the rosette and a delay due to strong winds and high swell the regular station work started on July 2<sup>nd</sup> at Porcupine Bank. Good weather conditions made sure that the section A1E was finished on July 11<sup>th</sup> east of Cape Farvel without any interruption. The last 3 stations of the planned section in water depths less than 1000 m had to be canceled because of the nearly closed pack ice belt above the shelf of East Greenland. The time reserve allowed to add 3 stations along the pack ice margin and a second section starting off Cape Farvel on July 11<sup>th</sup>. The section ran southeastwards to the Reykjanes Ridge, where it ended on July 14<sup>th</sup>. Reykjavik and the end of leg 1 of the cruise were reached on July 17<sup>th</sup>. All in all, 73 full-depth CTD stations with rosette water samples were occupied (Fig. 1).

Leg 2 of the cruise started on July 21<sup>st</sup> in the evening, when the *Alexander von Humboldt* left Reykjavik. A test station for the CTD system was occupied on July 23<sup>rd</sup> in the morning. The regular station work started on July 24<sup>th</sup> in the afternoon above the Reykjanes Ridge at 56 °N. From the next day onwards there was a repeated trouble with the echo sounder, which failed frequently. The station work ended on August 16<sup>th</sup> in the evening in the Irminger Sea at 61.5 °N after 8 additional stations and only 1.5 days of work interruption due to bad weather. From August 13<sup>th</sup> (station 86) onwards the water samples could no longer be analysed aboard due to

errors of the salinometer. As during leg 1 at each station water samples were stored for an analysis in the institute. The *Alexander von Humboldt* reached Reykjavik on August 19<sup>th</sup>. During leg 2 of the cruise 107 full-depth CTD stations with rosette water samples were occupied (Fig. 1).

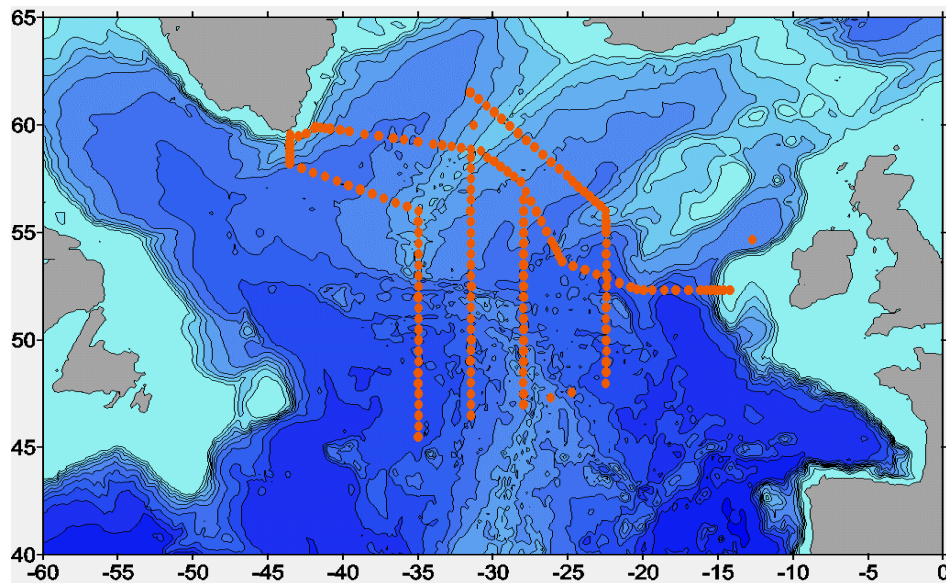


Fig. 1: CTD stations of the *Alexander von Humboldt* cruise 44/02/05.

### 3. Research staff

#### Leg 1

Jörn Alexander: CTD  
Manfred Bersch: Chief scientist  
Iris Frambach: CTD  
Andrea Lübben: CTD  
John Mortensen: CTD  
Roland Niebling: Salinometer  
Juliane Pestel: CTD  
Berit Rabe: CTD

#### Leg 2

Ole Albrecht: Salinometer  
Cevat Alkan: CTD  
Iris Ehlert: CTD  
Katja Radke: CTD  
Thomas Schlick: CTD  
Hagen Schulte in den Bäumen: CTD  
Klaus Schulze: Chief scientist  
Gunnar Voet: CTD

### 4. Scientific equipment and measurements

Seabird CTD: pressure, temperature, conductivity  
Altimeter: distance to the sea bottom

Seabird rosette: water samples  
SIS electronic thermometers: temperature  
SIS pressure sensor: pressure  
Guildline Autosal salinometer: salinity  
Global Positioning System receiver: latitude, longitude, UTC  
Echo sounder: water depth

At each station CTD profiles were recorded between the sea surface and the sea bottom. During the upcast water samples were taken at 10 levels maximum. The samples were analysed for salinity aboard and stored as backup. The CTD temperature and pressure were checked against the data from the SIS instruments, with no significant deviations found. The CTD data were processed and coarsely analysed aboard.