

Cruise: SKO0604
Ship: M/V Skogafoss
Dates: April 18 - 27, 2006
Chief Scientist: not applicable
Equipment: Surface samples collected.
Total number of stations: VOS Underway Cruise

Sample Collection

The discrete samples were collected by Kevin Sullivan at a tap on the side of the TSG enclosure in the engine room. The underway pCO₂ instrument and the TSG were supplied with water from the flow used for engine cooling. The water flowing through the TSG is believed to be 0.2 degrees C warmer than in-situ SST. The date and time listed in the data file are UTC when each sample bottle was collected.

DIC:

11 locations, 23 samples each 500-ml, 8 duplicates, 10 sets of duplicate samples
Sample_ID#: S01 - S24
PI: Dr. Rik Wanninkhof
Analyzed by: Esa Peltola

TAlk:

The samples analyzed for DIC were later analyzed for TAlk.
PI: Dr. Frank Millero
Analyzed by: Fen Huang

Salinity_1:

11 locations, 24 samples each 180-ml, 9 duplicates, 2 triplicates
Sample_ID#: 793 - 816
PI: Dr. Hedinn Valdimarsson
Analyzed by: Magnus Danielsen, Icelandic Marine Research Institute

Salinity_2:

4 locations, 24 samples each 180-ml
Sample_ID#: 1 - 24
PI: Dr. Jonathan Hare
Analyzed by: Northeast Fisheries Science Center, Narragansett Laboratory

13C:

22 locations, 35 samples each 250-ml, 9 duplicates, 2 triplicates
Sample_ID#: 42 - 350, 3024 - 3047
PI: Dr. Paul Quay
Analyzed by: Dave Wilbur

Sample Analysis

DIC:

Analysis date: May 15, 2006

Coulometers used: AOML1 and AOML2

Blank range: 18.8-26.5 counts/min

CRM # used and assigned value (include both DIC and salinity): Batch 66, c:1969.57 umol/kg,S:32.997

CRM value measured: AOML 1: offset 8.0 umol/kg (1961.5 umol/kg)

AOML-2: offset 6.3 umol/kg (1963.3 umol/kg)

Average run time, minimum run time, maximum run time: 13 min, 9 min, 20 min

Reproducibility: (# samples and average difference): 10 sets of duplicate samples, average difference 1.6 umol/kg

Salinity and HgCl₂ correction applied: yes

Remarks-

A density correction was applied for all the samples.

The volume correction was applied due to added HgCl₂ (Measured DIC*1.00037).

The average CRM correction was 7.1 umol/kg and was run in the beginning and end of the cell.

The first CRM of each cell was used for a CRM correction.

There was a good agreement between the duplicate samples, except samples S09 and S10. Also S13 differs from samples S11 and S12. No reason for these differences were found due to analysis. All 23 samples were sent to Millero's lab for alkalinity analysis

Comments

A GPS transducer was connected to the underway pCO₂ instrument as well as a thermosalinograph (TSG). The GPS and the TSG, a Seabird SBE-21, were maintained by the Ship of Opportunity Program at AOML (<http://www.aoml.noaa.gov/phod/tsg/soop/index.php>).

The latitude, longitude, temperature and salinity reported with the DIC and TALK measurements were taken from the raw TSG data file. The merging of the discrete measurements with the TSG data was done on the basis of date and time. The TSG values are provided for reference; no post-cruise assurance of accuracy has been done to this data. The results of the analyses of discrete salinity bottles appear on separate lines.

The Sample_ID is the sample bottle number for the discrete samples.