

CTD data series for cruise Valdivia VA174 (4 to 18 September 1998)

Cruise Principal Scientist and Data Originator

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Content of data series

Parameter	Unit	Parameter code	Number of casts	Comments
Pressure	db	PRESR01	166	none
Temperature (ITS90)	deg. C	TEMPST01	166	none
Potential temperature	deg. C	POTMCOV01	166	none
Salinity	PSU-78	PSALST01	166	none
Sigma-theta	kg m ⁻³	SIGTPR01	166	none
Chlorophyll a	µg l ⁻¹	CPHLPR01	166	calibrated from fluorescence
Mie backscattering	percent	OPBSMAXX	166	none

Instrumentation and data processing by originator

CTD unit and auxiliary sensors:

Sea-Bird Electronics 911 Plus system fitted with optical sensors (Dr. Haardt, Optik Mikroelektronik) for the detection of chlorophyll fluorescence (range 0-10 µg l⁻¹) and mie backscattering at 520 nm.

The Sea-Bird sensors were calibrated at the factory prior to the cruise. The specified accuracy was as follows: pressure ±0.35 dbar, temperature ±0.002 °C, conductivity ±0.003 mS/cm.

Change of sensors during the cruise: none reported.

Data were logged onto a PC running Seabird data acquisition software version Seasave Win32 v1.05 and manufacturer's calibration coefficients were applied to the raw data.

The fluorescence channel was calibrated by the originator against chlorophyll concentration extracted from water samples collected during the cruise (data originator: P. Tett, Napier University). The calibration equation applied was:

$$\text{Chl } (\mu\text{g l}^{-1}) = (\text{Chl_volts} - 0.05(\pm 0.02)) / 0.64 (\pm 0.03)$$

Data were supplied to BODC as downcast only, binned to 0.25 m.

Sampling device:

Rosette sampling system was equipped with 12 x 2.5-L sampling bottles.

No reversible thermometer was used.

BODC post-cruise processing and screening

Reformatting:

The data were converted into BODC internal format (PXF) to allow use of in-house software tools notably the workstation graphics editor SERPLO. In addition to reformatting, the transfer program converted the temperature data from ITS-68 to ITS-90 by dividing the CTD values by 1.00024.

Screening:

Reformatted CTD data were transferred onto a high-speed graphics workstation. Downcast channels were screened graphically using custom in-house graphics editors. If present, spikes and suspicious values were manually flagged. No data values were edited or deleted; flagging was achieved by modification of the associated quality control flag to 'M' for suspicious data, 'N' for null.

BODC Data Documentation
PROVESS Project MAS3-CT97-015

Banking:

Once screened on the workstation, the CTD downcasts were loaded into a database under the ORACLE Relational Database Management System.

Calibration:

All channels had already been calibrated by the data originator and no further calibration/correction was applied by BODC.

Comments on data quality

None to report.