

CTD profiles R/V Islandia cruise ISL0109 near the TENATSO (Tropical Eastern North Atlantic Time-Series Observatory) time series station Cape Verde. from 2009 to 2009 (SIRENA project)

Website: <https://www.bco-dmo.org/dataset/3482>

Version: 20 May 2011

Version Date: 2011-05-20

Project

» [Sources of Iron to the EasterN tropical Atlantic](#) (SIRENA)

Program

» [Ocean Carbon and Biogeochemistry](#) (OCB)

Contributors	Affiliation	Role
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Dataset Description

CTD profile data for ISL0109

Methods & Sampling

```
* Sea-Bird SBE 19plus Data File:
* FileName = C:CTDDataSIR20109_cast004.hex
* Software Version Seasave V 7.16a
* Temperature SN = 5080
* Conductivity SN = 5080
* System UpLoad Time = Mar 10 2009 23:14:21
** Ship: Islandia
** Station: TENATSO
** Operator: Pericles
# nquan = 11
# nvalues = 1873
# units = specified
# name 0 = tv290C: Temperature [ITS-90, deg C]
# name 1 = c0S/m: Conductivity [S/m]
# name 2 = prdM: Pressure, Strain Gauge [db]
# name 3 = sbeox0Mm/Kg: Oxygen, SBE 43 [umol/Kg]
# name 4 = sal00: Salinity [PSU]
# name 5 = sigma-é00: Density [sigma-theta, Kg/m^3]
```

```

# name 6 = depSM: Depth [salt water, m]
# name 7 = ptempC: Pressure Temperature [deg C]
# name 8 = oxsatML/L: Oxygen Saturation [m/l]
# name 9 = timeM: Time, Elapsed [minutes]
# name 10 = flag: 0.000e+00
# span 0 = 15.5792, 21.1741
# span 1 = 4.467451, 5.095628
# span 2 = 0.904, 155.844
# span 3 = 83.853, 218.662
# span 4 = 35.9593, 36.8331
# span 5 = 25.4629, 26.6460
# span 6 = 0.899, 154.855
# span 7 = 17.62, 20.16
# span 8 = 5.01180, 5.58779
# span 9 = 0.0000, 7.8000
# span 10 = 0.0000e+00, 0.0000e+00
# interval = seconds: 0.25
# start_time = Mar 10 2009 23:14:21
# bad_flag = -9.990e-29
# sensor 0 = Frequency 0 temperature, 5080, 05-Nov-06
# sensor 1 = Frequency 1 conductivity, 5080, 05-Nov-06, cpcor = -9.5700e-08
# sensor 2 = Pressure Number
# sensor 3 = Extrnl Volt 0 Oxygen, SBE, primary, 1481, 23-Jul-08
# datcnv_date = Mar 11 2009 22:49:28, 7.14e
# datcnv_in = Z:workwhoiCapeVerdeTENATSOIslandia_CTD_dataSIR20109_cast004.hex
Z:workwhoiCapeVerdeTENATSOIslandia_CTD_dataSIR20109_cast004.CON
# datcnv_skipover = 0
# file_type = ascii
*END*

```

Data Processing Description

Seabird data processed on board R/V Islandia by Mr. Pericles Silva

BCO-DMO Processing Notes

- Awk written to reformat original .cnv files contributed by Phoebe Lam
- AWK: ISL0109_CTD_2_BCODMO.awk

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Data Files

File
CTD_ISL0109.csv (Comma Separated Values (.csv), 8.44 MB) MD5:3d4dc504a0a59cee01c1b445734bcb9b Primary data file for dataset ID 3482

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Parameters

Parameter	Description	Units
CTD_DataSet_Id	CTD Dataset Id	text
station	station number	integer
cast	cast number	integer
date	Station date	YYYYMMDD
time	Station time	HHMMSS
lat	Station latitude (South is negative)	decimal degrees
lon	Station longitude (West is negative)	decimal degrees
tv290C	Temperature ITS-90	degrees celsius
c0S_m	Conductivity	S/m
prdM	Pressure Strain Gauge	decibars
sbeox0Mm_Kg	Oxygen SBE 43	umol/Kg
sal00	Salinity	PSU
sigma_e00	Density sigma-theta	Kg/m ³
depSM	Depth salt water	meters
ptempC	Pressure Temperature	degrees celsius
oxsatML_L	Oxygen Saturation	ml/l
timeM	Time Elapsed	minutes
flag	flag	nd

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Instruments

Dataset-specific Instrument Name	CTD Sea-Bird SEACAT 19
Generic Instrument Name	CTD Sea-Bird SEACAT 19
Generic Instrument Description	The Sea-Bird SBE 19 SEACAT Recorder measures conductivity, temperature, and pressure (depth). The SEACAT is self-powered and self-contained and can be deployed in profiling or moored mode. The SBE 19 SEACAT was replaced in 2001 by the 19plus. more information from Sea-Bird Electronics

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Deployments

ISL0109

Website	https://www.bco-dmo.org/deployment/58664
Platform	R/V Islandia
Start Date	2009-03-10
End Date	2009-03-11
Description	*/ TENATSO (Tropical Eastern North Atlantic Time-Series Observatory) time series station 16°N, 24°W, North-east of Mindelo, Sao Vicente, Cape Verde TENATSO Home */ Science party: Phoebe J. Lam, WHOI Daniel C. Ohnemus, WHOI Kanchan Maiti, WHOI Pericles Silva, Instituto Nacional de Desenvolvimento das Pescas (INDP)

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Project Information

Sources of Iron to the EasterN tropical Atlantic (SIRENA)

Website: <http://www.whoi.edu/sbl/liteSite.do?litesiteid=24492>

Coverage: Tropical North Atlantic, focusing on a Cape Verde to Mauritanian Coast transect

We will test the hypothesis that the continental margin of northwest Africa provides a significant subsurface supply of iron to the open eastern tropical Atlantic that supplements dust.

We will test our continental margin hypothesis with a wintertime visit to the new Tropical Eastern North Atlantic Time-Series Observatory (TENATSO) near Cape Verde, located in the eastern tropical Atlantic about 850 km downstream of Mauritanian coastal upwelling, and a summertime cross-shelf transect from the Mauritanian coast to TENATSO with Ed Boyle, who is already funded to study iron in the tropical Atlantic. Our cross-shelf transect will closely examine the potential lateral source of Fe, and evaluate it against an atmospheric source of Fe. Our proposal takes advantage of a novel combination of measurements to uniquely determine the importance of lateral transport vs. dust inputs and subsurface remineralization as Fe sources to the surface ocean. These measurements include:

- 1) synchrotron x-ray analysis of particulate iron "hotspots": micron-size particles of iron detected with a synchrotron x-ray fluorescence microprobe have been previously shown to exhibit maxima at depths of continental margin input in two ocean basins. Further, the Ti:Fe ratios and the mineralogy of these particles of iron can distinguish dust-derived vs. continental margin iron. This is a qualitative tracer for a dust vs continental margin source of Fe.
- 2) radium isotopes: the major source of ²²⁸Ra into the study area is by diffusion from ²³²Th-bearing near shore and continental shelf sediments. An open-ocean to coastal transect of ²²⁸Ra activities will allow us to determine horizontal mass transfer. ²²⁸Ra will be used to quantify the lateral flux of iron from the shelf.
- 3) ²³⁴Th profiles: high vertical resolution ²³⁴Th profiles can be used to determine the depth of particle remineralization. This will be used to determine whether or not putative subsurface Fe maxima are from remineralization of Fe-bearing particles.

TENATSO (Tropical Eastern North Atlantic Time-Series Observatory) time series station
16°N, 24°W, North-east of Mindelo, Sao Vicente, Cape Verde

[TENATSO Home](#)

[TENATSO/SIRENA at Cafe Thorium/WHOI](#)

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Program Information

Ocean Carbon and Biogeochemistry (OCB)

Website: <http://us-ocb.org/>

Coverage: Global

The Ocean Carbon and Biogeochemistry (OCB) program focuses on the ocean's role as a component of the global Earth system, bringing together research in geochemistry, ocean physics, and ecology that inform on and advance our understanding of ocean biogeochemistry. The overall program goals are to promote, plan, and coordinate collaborative, multidisciplinary research opportunities within the U.S. research community and with international partners. Important OCB-related activities currently include: the Ocean Carbon and Climate Change (OCCC) and the North American Carbon Program (NACP); U.S. contributions to IMBER, SOLAS, CARBOOCEAN; and numerous U.S. single-investigator and medium-size research projects funded by U.S. federal agencies including NASA, NOAA, and NSF.

The scientific mission of OCB is to study the evolving role of the ocean in the global carbon cycle, in the face of environmental variability and change through studies of marine biogeochemical cycles and associated ecosystems.

The overarching OCB science themes include improved understanding and prediction of: 1) oceanic uptake and release of atmospheric CO₂ and other greenhouse gases and 2) environmental sensitivities of biogeochemical cycles, marine ecosystems, and interactions between the two.

The OCB Research Priorities (updated January 2012) include: ocean acidification; terrestrial/coastal carbon fluxes and exchanges; climate sensitivities of and change in ecosystem structure and associated impacts on biogeochemical cycles; mesopelagic ecological and biogeochemical interactions; benthic-pelagic feedbacks on biogeochemical cycles; ocean carbon uptake and storage; and expanding low-oxygen conditions in the coastal and open oceans.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0726367

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