

CTD station log of R/V Pelagia 64PE280 in the tropical and subtropical Atlantic from 2007-2008 (Basin-scale Protists project)

Website: <https://www.bco-dmo.org/dataset/4079>

Data Type: Cruise Results

Version: 2013-11-02

Project

» [Basin-scale distribution and activity of deep-sea protists in the North Atlantic Ocean](#) (Basin-scale Protists)

Program

» [Integrated Marine Biogeochemistry and Ecosystem Research -US](#) (IMBER-US)

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Dataset Description

This is the log for CTD casts in (sub)tropical Atlantic transect from Brazil to West Africa, and to Cape Verde Islands.

Data Processing Description

Related files and references:

Context data for this cruise are stored on the Centralized Oceanographic Data Information System (CODIS) of the Data Management Group at the Netherlands Institute of Sea Research (www.nioz.nl/portals-en). Cruise number: 64PE280.

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Data Files

File
ctd_log.csv (Comma Separated Values (.csv), 12.77 KB) MD5:d19c8f9108afda35bf4ce000585fa3b0
Primary data file for dataset ID 4079

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Parameters

Parameter	Description	Units
cruise_id	cruise identification	unitless
sta	station number	unitless
cast	cast number	unitless
cast_type	cast type; ROS=CTD mounted on rosette sampler	unitless
date	date UTC	unitless
time	time UTC	unitless
lat	latitude; north is positive	decimal degrees
lon	longitude; east is postive	decimal degrees
depth	corrected depth	meters
press_max	maximum pressure	decibars
ctd_data_file	NIOZ identifier of associated CTD data	unitless
comment	comments	unitless
cruise_name	alternate cruise name	unitless

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Instruments

Dataset-specific Instrument Name	CTD profiler
Generic Instrument Name	CTD - profiler
Generic Instrument Description	The Conductivity, Temperature, Depth (CTD) unit is an integrated instrument package designed to measure the conductivity, temperature, and pressure (depth) of the water column. The instrument is lowered via cable through the water column. It permits scientists to observe the physical properties in real-time via a conducting cable, which is typically connected to a CTD to a deck unit and computer on a ship. The CTD is often configured with additional optional sensors including fluorometers, transmissometers and/or radiometers. It is often combined with a Rosette of water sampling bottles (e.g. Niskin, GO-FLO) for collecting discrete water samples during the cast. This term applies to profiling CTDs. For fixed CTDs, see https://www.bco-dmo.org/instrument/869934 .

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Deployments

64PE280

Website	https://www.bco-dmo.org/deployment/59113
Platform	R/V Pelagia
Report	http://melia.nioz.nl/phptoweb/dmg/melia-codis.php?script=search/bycruise.inc
Start Date	2007-12-19
End Date	2008-01-16
Description	Transect over the subtropical and tropical Atlantic from Brazil to West Africa, and to Cape Verde Islands. The RVPelagia operates out of the Royal Netherlands of Sea Research (NIOZ)

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Project Information

Basin-scale distribution and activity of deep-sea protists in the North Atlantic Ocean (Basin-scale Protists)

Coverage: Tropical and subtropical Atlantic

ABSTRACT

Little is known about the distribution and ecology of eukaryotic microbes of the deep sea water column. Most of these microbes are small heterotrophic flagellates that feed on bacteria, where biomass in turn is fueled by the input of dissolved and particulate organic material from the surface. This study seeks to understand the distribution of eukaryotic microbes (i.e., protists) in the context of large, basin scale variations in hydrographic and chemical properties. The main hypothesis is that the abundance and taxonomic composition of protists serve as sensitive indicators of the strength and type (particulate or dissolved) of input of organic carbon into the deep ocean system. Samples in vertical profiles targeting major water masses across the North Atlantic will be collected. In addition, deep sea samples will be retrieved under pressure and incubated at in situ pressure and temperature in four newly designed chemostat systems. These cultures will be sub-sampled under pressure and examined for nutrient concentration, as well as for the purpose of monitoring the abundance of both prokaryotes and protists in the chambers. Using the same pressure samplers in short-term incubations,

the investigators will explore the activity of deep sea protists by investigating the proportion of actively feeding organisms on fluorescently labeled bacteria. They will enumerate deep sea protists using a combination of fluorescence in situ hybridization and traditional staining methods, and will support taxonomic classifications using electron microscopy. Semi-automated epifluorescence microscopy with image analysis capabilities will be used to scan major filter areas and probe for rare microbes that normally fall below detection limits of other methods. In laboratory experiments, the investigators will use the newly built culture system to study pressure effects of eukaryotic protists while simulating temperature and pressure changes that sinking particles are exposed to when they sink to the abyss.

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Program Information

Integrated Marine Biogeochemistry and Ecosystem Research -US (IMBER-US)

Website: <http://www.imber.info/>

Coverage: global

The BCO-DMO database includes data from IMBER endorsed projects lead by US funded investigators. There is no dedicated US IMBER project or data management office. Those functions are provided by US-OCB and BCO-DMO respectively.

The information in this program description pertains to the Internationally coordinated IMBER research program. The projects contributing data to the BCO-DMO database are those funded by US NSF only. The full IMBER data catalog is hosted at the Global Change Master Directory (GCMD).

IMBER Data Portal: The IMBER project has chosen to create a metadata portal hosted by the NASA's Global Change Master Directory (GCMD). The GCMD IMBER data catalog provides an overview of all IMBER endorsed and related projects and links to datasets, and can be found at URL <http://gcmd.nasa.gov/portals/imber/>.

IMBER research will seek to identify the mechanisms by which marine life influences marine biogeochemical cycles, and how these, in turn, influence marine ecosystems. Central to the IMBER goal is the development of a predictive understanding of how marine biogeochemical cycles and ecosystems respond to complex forcings, such as large-scale climatic variations, changing physical dynamics, carbon cycle chemistry and nutrient fluxes, and the impacts of marine harvesting. Changes in marine biogeochemical cycles and ecosystems due to global change will also have consequences for the broader Earth System. An even greater challenge will be drawing together the natural and social science communities to study some of the key impacts and feedbacks between the marine and human systems.

To address the IMBER goal, four scientific themes, each including several issues, have been identified for the IMBER project: Theme 1 - Interactions between Biogeochemical Cycles and Marine Food Webs; Theme 2 - Sensitivity to Global Change: How will key marine biogeochemical cycles, ecosystems and their interactions, respond to global change?; Theme 3 - Feedback to the Earth System: What are the roles of the ocean biogeochemistry and ecosystems in regulating climate?; and Theme 4 - Responses of Society: What are the relationships between marine biogeochemical cycles, ecosystems, and the human system?

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0826659

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