R/V Falkor 160115 CTD log from the ProteOMZ expedition in the Central Pacfic during 2016 (ProteOMZ project)

Website: https://www.bco-dmo.org/dataset/708458

Data Type: Cruise Results

Version: 1

Version Date: 2017-09-07

Project

» The ProteOMZ Expedition: Investigating Life Without Oxygen in the Pacific Ocean (ProteOMZ (Proteomics in an Oxygen Minimum Zone))

Contributors	Affiliation	Role
Saito, Mak A.	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator, Contact
Santoro, Alyson	University of California-Santa Barbara (UCSB-LifeSci)	Co-Principal Investigator
Ake, Hannah	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Abstract

R/V Falkor 160115 CTD log from the ProteOMZ expedition in the Central Pacfic during 2016 (ProteOMZ project)

Table of Contents

Coverage

Spatial Extent: **N**:17.3626 **E**:-138.6914 **S**:0.1413 **W**:-156.9507

Temporal Extent: 2016-01-17 - 2016-02-01

Dataset Description

R/V Falkor 160115 CTD log from the ProteOMZ expedition in the Central Pacific during 2016.

Acquisition Description

R/V Falkor 160115 CTD log data.

Sampling was conducted using a CTD.

Processing Description

BCO-DMO Data Processing Notes:

- reformatted column names to comply with BCO-DMO standards.
- replaced spaces in column names with underscores.
- removed special characters from column names.
- removed units from column names.

[table of contents | back to top]

Parameters

Parameter	Description	Units
cruise	Cruise name	unitless
station	Station number	unitless
type	Event type; bottle only	unitless
date	Date of sampling; YYYY/MM/DD	unitless
time	Local time of sampling; HH:MM	unitless
lon	Longitude; E is positive	decimal degrees
lat	Latitude; N is positive	decimal degrees
cast	Cast ID number	unitless
niskin	Niskin bottle ID number	unitless
target_depth	Target depth	meters
actual_depth	Actual depth	meters
ISO_DateTime_UTC	Date ISO formatted; UTC	unitless

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	CTD
Generic Instrument Name	CTD profiler
Dataset-specific Description	Used for water sampling
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 and permits scientists observe the physical properties in real time via a conducting cable connecting the CTD to a deck unit and computer on the 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 instrument designation is used when specific make and model are not known.

Dataset-specific Instrument Name	MIMS
Generic Instrument Name	Membrane Inlet Mass Spectrometer
Generic Instrument Description	Membrane-introduction mass spectrometry (MIMS) is a method of introducing analytes into the mass spectrometer's vacuum chamber via a semipermeable membrane.

[table of contents | back to top]

Deployments

FK160115

Website	https://www.bco-dmo.org/deployment/708387
Platform	R/V Falkor
Start Date	2016-01-16
End Date	2016-02-11
Description	Project: Using Proteomics to Understand Oxygen Minimum Zones (ProteOMZ) More info at https://schmidtocean.org/cruise/investigating-life-without-oxygen-in-the...

[table of contents | back to top]

Project Information

The ProteOMZ Expedition: Investigating Life Without Oxygen in the Pacific Ocean (ProteOMZ (Proteomics in an Oxygen Minimum Zone))

Website: https://schmidtocean.org/cruise/investigating-life-without-oxygen-in-the-tropical-pacific/#team

Coverage: Central Pacific Ocean (Hawaii to Tahiti)

From Schmidt Ocean Institute's ProteOMZ Project page: Rising temperatures, ocean acidification, and overfishing have now gained widespread notoriety as human-caused phenomena that are changing our seas. In recent years, scientists have increasingly recognized that there is yet another ingredient in that deleterious mix: a process called deoxygenation that results in less oxygen available in our seas. Large-scale ocean circulation naturally results in low-oxygen areas of the ocean called oxygen deficient zones (ODZs). The cycling of carbon and nutrients – the foundation of marine life, called biogeochemistry – is fundamentally different in ODZs than in oxygen-rich areas. Because researchers think deoxygenation will greatly expand the total area of ODZs over the next 100 years, studying how these areas function now is important in predicting and understanding the oceans of the future. This first expedition of 2016 led by Dr. Mak Saito from the Woods Hole Oceanographic Institution (WHOI) along with scientists from University of Maryland Center for Environmental Science, University of California Santa Cruz, and University of Washington aimed to do just that, investigate ODZs. During the 28 day voyage named “ProteOMZ,” researchers aboard R/V Falkor traveled from Honolulu, Hawaii to Tahiti to describe the biogeochemical processes that occur within this particular swath of the ocean’s ODZs. By doing so, they contributed to our greater understanding of ODZs, gathered a database of baseline measurements to which future measurements can be compared, and established a new methodology that could be used in future research on these expanding ODZs.

[table of contents | back to top]

Funding

Funding Source	Award
Gordon and Betty Moore Foundation (Moore)	GBMF3782
Alfred P. Sloan Foundation (Sloan)	Unknown ProteOMZ Sloan Foundation
Schmidt Ocean Institute (SOI)	R/V Falkor 160115 SOI ProteOMZ Expedition

[table of contents | back to top]