Surface water characteristics measured while underway from R/V Ka'imikai-O-Kanaloa KOK1115near Kona, Hawaii from December 2011 (C-MORE project)

Website: https://www.bco-dmo.org/dataset/517226
Version: 05 June 2014
Version Date: 2014-06-05

Project
» Center for Microbial Oceanography: Research and Education (C-MORE)

Contributors	Affiliation	Role
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Dataset Description

CMORE : BAG underway data was collected using a SeaBird SBE-21 Seacat thermosalinograph system and a Seapoint fluorometer. They were screened for errors and processed to 1-minute averages.

Methods & Sampling

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Data Processing Description

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Data Files

File
underway_bag1.csv(Comma Separated Values (.csv), 656.32 KB) MD5:aab6a454c81d4fe5fe7b2848ad8a8089 Primary data file for dataset ID 517226

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Parameters

Parameter	Description	Units
date	date GMT	YYYYMMDD
time	time of day GMT	HHMM
lat	latitude (north is positive)	decimal degrees
lon	longitude (east is positive)	decimal degrees
temp	temperature from CTD [ITS-90]	degrees Celsius
sal	salinity from CTD	PSS-78
fluor	fluorescence from CTD	micrograms/liter
qflag	quality flags (salinity/temperature/fluorescence) 1: not quality controlled 2: good data 3: suspect data 4: bad data 5: missing data 9: not measured	dimensionless

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Instruments

Dataset-specific Instrument Name	Seapoint fluorometer
Generic Instrument Name	Fluorometer
Dataset-specific Description	CMORE : BAG underway data was collected using a SeaBird SBE-21 Seacat thermosalinograph system and a Seapoint fluorometer. They were screened for errors and processed to 1-minute averages.
Generic Instrument Description	A fluorometer or fluorimeter is a device used to measure parameters of fluorescence: its intensity and wavelength distribution of emission spectrum after excitation by a certain spectrum of light. The instrument is designed to measure the amount of stimulated electromagnetic radiation produced by pulses of electromagnetic radiation emitted into a water sample or in situ.

Dataset-specific Instrument Name	SeaBird SBE-21 Seacat thermosalinograph system
Generic Instrument Name	Sea-Bird SeaCAT Thermosalinograph SBE 21
Dataset-specific Description	CMORE : BAG underway data was collected using a SeaBird SBE-21 Seacat thermosalinograph system and a Seapoint fluorometer. They were screened for errors and processed to 1-minute averages.
Generic Instrument Description	A platinum-electrode conductivity sensor and a thermistor mounted in a corrosion-resistant plastic and titanium housing designed to be continuously plumbed into a vessel's pumped seawater supply. The instrument may be interfaced to a remote SBE 38 temperature sensor mounted either on the hull or in the seawater inlet. Data are both stored in internal memory and output to a serial port for external logging. Conductivity is measured in the range 0-7 S/m with an accuracy of 0.001 S/m and a resolution of 0.0001 S/m. Housing temperature is measured in the range -5-35C with an accuracy of 0.01 C and a resolution of 0.001 C. Remote temperature is measured in the range -5-35C with an accuracy of 0.001 C and a resolution of 0.0003 C. More information at http://www.seabird.com/products/spec_sheets/21data.htm.

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Deployments

KOK1115

Website	https://www.bco-dmo.org/deployment/516667
Platform	R/V Ka`imikai-O-Kanaloa
Report	http://cmore.soest.hawaii.edu/cmoredata/logs/BAG/BAG1/BAG1_Post_Cruise_Summation.pdf
Start Date	2011-12-03
End Date	2011-12-13
Description	BAG EM UP (Biogeochemistry and Genomes (BAG-1) Mesocosm Experiment: Experimental Long term ocean ecology characterization is predicated on a variety of in situ shorter term experiments and field exercises. These shorter term experiments can be generally classed in one of two ways. The first way of approach is to observe or capture physical or biogeochemical ocean events that are short term in duration or in location. We would consider the use of the research vessel or autonomous vehicle, or sediment trap part of this first approach. The second type of experiment is also an in situ approach, where one perturbs a “subset” of the natural ecosystem by manipulating or isolating various features (and/or processes) to test a hypothesis. This is illustrated with the use of instruments such as the wave pump (transport mechanism) or with our current effort to utilize a system of larger ‘bags’ called mesocosms (larger volume subset) to induce a phytoplankton response. Historically, the mesocosm is akin to the use of lakes or ponds to test the growth response (negative or positive) of an ecosystem when artificially exposed to a variety of chemical substances. The mesocosm does enclose a larger mass of water but it is different from a pond or lake, in that the ratio of the vertical depth (benthic) to the horizontal affords the user unique opportunities to simulate depth or measure stratified characteristics of plankton communities. In this particular cruise experiment, IFM-GEOMAR and C-MORE are partnering together to utilize three mesocosms in the open ocean to study the biogeochemical effects to Deep Sea Water (DSW) nutrient additions. This exercise has both engineering and scientific components. The first part is to test the feasibility of deploying and successfully maintaining large scale mesocosms in the open ocean. This mesocosm design has been successfully used in the Arctic region: Ny-Alesund | Svalbard, so our goal is to extend its usage into more potential hostile conditions. The second part is to measure the surface response of the phytoplankton when deep water macro and micro nutrients are added in. Website Introduction Post Cruise Summary Cruise Log Bridge Log Cast Sheets **Processing Description** # C-MORE BAG-EM-UP underway data # Laboratory for Microbial Oceanography, University of Hawaii # Steve Poulos # CMORE/BAG-EM-UP # date ingested into BCO-DMO: June 5, 2014

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Project Information

Center for Microbial Oceanography: Research and Education (C-MORE)

Website: http://cmore.soest.hawaii.edu/

Coverage: North Pacific Subtropical Gyre (large region around 22 45 N, 158 W)

Project summary

The **Center for Microbial Oceanography: Research and Education** (C-MORE) is a recently established (August 2006; NSF award: EF-0424599) NSF-sponsored Science and Technology Center designed to facilitate a more comprehensive understanding of the diverse assemblages of microorganisms in the sea, ranging from the genetic basis of marine microbial biogeochemistry including the metabolic regulation and environmental controls of gene expression, to the processes that underpin the fluxes of carbon, related bioelements and energy in the marine environment. Stated holistically, C-MORE's primary mission is: *Linking Genomes to Biomes*.

We believe that the time is right to address several major, long-standing questions in microbial oceanography.

Recent advances in the application of molecular techniques have provided an unprecedented view of the structure, diversity and possible function of sea microbes. By combining these and other novel approaches with more well-established techniques in microbiology, oceanography and ecology, it may be possible to develop a meaningful predictive understanding of the ocean with respect to energy transduction, carbon sequestration, bioelement cycling and the probable response of marine ecosystems to global environmental variability and climate change. The strength of C-MORE resides in the synergy created by bringing together experts who traditionally have not worked together and this, in turn, will facilitate the creation and dissemination of new knowledge on the role of marine microbes in global habitability.

The new Center will design and conduct novel research, broker partnerships, increase diversity of human resources, implement education and outreach programs, and utilize comprehensive information about microbial life in the sea. The Center will bring together teams of scientists, educators and community members who otherwise do not have an opportunity to communicate, collaborate or design creative solutions to long-term ecosystem scale problems. The Center's research will be organized around four interconnected themes:

- (Theme I) microbial biodiversity,
- (Theme II) metabolism and C-N-P-energy flow,
- (Theme III) remote and continuous sensing and links to climate variability, and
- (Theme IV) ecosystem modeling, simulation and prediction.

Each theme will have a leader to help coordinate the research programs and to facilitate interactions among the other related themes. The education programs will focus on pre-college curriculum enhancements, in service teacher training and formal undergraduate/graduate and post-doctoral programs to prepare the next generation of microbial oceanographers. The Center will establish and maintain creative outreach programs to help diffuse the new knowledge gained into society at large including policymakers. The Center's activities will be dispersed among five partner institutions:

- Massachusetts Institute of Technology,
- Woods Hole Oceanographic Institution,
- Monterey Bay Aquarium Research Institute,
- University of California at Santa Cruz and
- Oregon State University

and will be coordinated at the University of Hawaii at Manoa.

Related Files:

Strategic plan (PDF file)

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Funding

Funding Source	Award
NSF Division of Biological Infrastructure (NSF DBI)	DBI-0424599
Gordon and Betty Moore Foundation (GBMF)	unknown C-MORE Moore

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