BULA HPLC pigment data from R/V Kilo Moana cruise KM0704 along the transect from Suva, Fiji to Honolulu, Hawaii in April 2007

Website: https://www.bco-dmo.org/dataset/660319
Data Type: Cruise Results
Version: 2016-09-29

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

Contributors	Affiliation	Role
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Data Files

File
core_hplc.csv (Comma Separated Values (.csv), 5.74 KB) MD5:c56ef9a70e1303f2109a2dfb257a0294 Primary data file for dataset ID 660319

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Parameters

Parameter	Description	Units
sta	station number	dimensionless
cast	cast number	dimensionless
date	date	YYYYMMDD GMT

time	time	HHMM GMT
lat	latitude	decimal degrees (South is negative)
lon	longitude	decimal degrees (West is negative)
depth	depth	meters
bot	rosette bottle number	dimensionless
chlide_a	chlorophyllide a	nanograms/liter
chl_c	chlorophyll c	nanograms/liter
peridinin	peridinin	nanograms/liter
fucox_but	19'-butanoyloxyfucoxanthin	nanograms/liter
fucox	fucoxanthin	nanograms/liter
fucox_hex	19'-hexanoyloxyfucoxanthin	nanograms/liter
prasinox	prasinoxanthin	nanograms/liter
violax	violaxanthin	nanograms/liter
diadinox	diadinoxanthin	nanograms/liter
allox	alloxanthin	nanograms/liter
diatox	diatoxanthin	nanograms/liter
lutein	lutein	nanograms/liter
zeax	zeaxanthin	nanograms/liter
chl_b1	monovinyl chlorophyll b	nanograms/liter

carotene_a	alpha carotene	nanograms/liter
carotene_b	beta carotene	nanograms/liter
chl_a2	divinyl chlorophyll a	nanograms/liter
chl_a1	monovinyl chlorophyll a	nanograms/liter
chl_a_tot	monovinyl + divinyl chlorophyll a	nanograms/liter

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Instruments

Dataset-specific Instrument Name	
Generic Instrument Name	High-Performance Liquid Chromatograph
Generic Instrument Description	A High-performance liquid chromatograph (HPLC) is a type of liquid chromatography used to separate compounds that are dissolved in solution. HPLC instruments consist of a reservoir of the mobile phase, a pump, an injector, a separation column, and a detector. Compounds are separated by high pressure pumping of the sample mixture onto a column packed with microspheres coated with the stationary phase. The different components in the mixture pass through the column at different rates due to differences in their partitioning behavior between the mobile liquid phase and the stationary phase.

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Deployments

KM0704

Website	https://www.bco-dmo.org/deployment/57997
Platform	R/V Kilo Moana
Report	http://bcodata.whoi.edu/C-MORE/BULA1_cruise_activities.pdf
Start Date	2007-04-19
End Date	2007-04-30
Description	The BULA cruise, a transect from Suva, Fiji to Honolulu, Hawaii was the inagural cruise of the Center for Microbial Oceanography: Research and Education (C-MORE). Some of the many goals were: (1) to identify prominent trends in plankton biomass, biomass structure, and elemental stoichiometry, (2) to examine latitudinal variability in upper ocean concentrations of colored dissolved organic matter and trace metal ligands, (3) to isolate new Prochlorococcus strains, (4) to optically determine upper ocean biogeochemical variables, (5) to study the distribution, production and loss rates of dissolved hydrogen and its relationship to nitrogen fixation, (6) to study viral diversity along biogeochemical gradients, (7) to assay spatial distributions of microbial community structure based on rRNA fingerprinting and sequencing, and (8) to assess spacial variability in photophysiological responses to photoautotrophs. Original sources available from C-MORE Web Site: BULA Home page: http://cmore.soest.hawaii.edu/cruises/bula/index.htm BULA Data: http://hahana.soest.hawaii.edu/cmorebula/cmorebula.html Cruise track: http://hahana.soest.hawaii.edu/cmorebula/bula1track.gif Cruise log: http://hahana.soest.hawaii.edu/cmorebula/CMOREBULA_Cruise_Log.pdf (sample log sheets) Cruise activities: http://hahana.soest.hawaii.edu/cmorebula/Cruise_activities.pdf (Cruise Report) Cruise summary: ftp://ftp.soest.hawaii.edu/dkarl/cmore/cruise.summaries/bula1.sum (station/cast locations) Cruise information and original data are available from the NSF R2R data catalog.

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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

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