Vertical profiles of PAR, upwelled irradiance and CTD data from R/V Endeavor cruise EN198 in the North Atlantic (U.S. JGOFS NABE project)

Website: https://www.bco-dmo.org/dataset/2567
Version: final
Version Date: 1995-08-02

Project
» U.S. JGOFS North Atlantic Bloom Experiment (NABE)

Program
» U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Contributors	Affiliation	Role
Broenkow, William	Moss Landing Marine Laboratories (MLML)	Principal Investigator
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Dataset Description

Vertical profiles of PAR, upwelled irradiance w/CTD data

Methods & Sampling

PI: William Broenkow
of: Moss Landing Marine Laboratories
dataset: Vertical profiles of PAR, upwelled irradiance w/CTD data from Moss Landing
dates: June 30, 1989 to July 4, 1989
location: N: 59.5283 S: 59.4900 W: -20.9833 E: -20.8383
project/cruise North Atlantic Bloom Experiment/Endeavor 198
ship: Endeavor

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Data Files

File
optics.csv (Comma Separated Values (.csv), 11.75 KB)
MD5:f6edf499392d5f87abceab8e0451bc27
Primary data file for dataset ID 2567

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Parameters

Parameter	Description	Units
sta	station	
cast	CTD cast number from event log	
event	event number from event log	
lat	latitude from event log	decimal degrees
lon	longitude from event log	decimal degrees
par_ei_norm	Mean incident Ei PAR	uMole/m^2/sec
depth_cast	nominal maximum depth of cast	meters
time1	Mean Time GMT	decimal hrs
time_span1	Time Span	min
repl_1	Replicates per depth	
sal	Mean Salinity	dimensionless
temp1	Mean Temperature	degrees C
press1	Mean Pressure	decibars
o2	Mean Oxygen	ml/l
beam	Mean Beam Attenuation 490 nm	1/m
fluor	Mean Rescaled Fluorescence 680 nm	
time2	Mean Time GMT	decimal hrs
time_span2	Time Span	minutes
repl_2	Replicates per depth	
lu_450	Mean Upwelled Radiance Lu 450 nm	uW/cm^2/sr
lu_500	Mean Upwelled Radiance Lu 500 nm	uW/cm^2/sr
par_eo	Mean PAR Spherical Irradiance Eo	uMole/m^2/sec
par_ei	Mean Incidence Irradiance Ei	uMole/m^2/sec
temp2	Mean Temperature	degrees C
press2	Mean Pressure	decibars
lu_450_pc	percent Upwelled Radiance Lu 450 nm	percent
lu_500_pc	percent Upwelled Radiance Lu (500 nm)	percent
par_eo_pc	percent PAR Spherical Irradiance Eo	percent

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Instruments

Dataset-specific Instrument Name	Bio-Optical Profiling System
Generic Instrument Name	Bio-Optical Profiling System
Dataset-specific Description	Bio Optical Profiler
Generic Instrument Description	Bio-Optical Profiling System (BOPS) is an updated version of the BOPS originally developed by Smith et al. (1984) and is used to collect optical data. The heart of the BOPS is a Biospherical instruments MER-1048 Spectroradiometer which measures up and downwelling spectral irradiance and upwelling spectral radiance. The MER-1048 also has sensors for Photosynthetically Available Radiation (PAR), depth, tilt and roll. In addition, temperature and conductivity are measured with a Sea-Bird CTD, chlorophyll fluorescence is measured with a Sea Tech fluorometer and beam transmission with a Sea Tech 25-cm transmissometer. The Mer-1048 acquires all the data 16 times a second, averages it to four records a second and sends it up the cable to a deck box and a Compaq-286 computer which stores the data on the hard disk. Additionally, a deck cell measures the downwelling surface irradiance in four spectral channels. Also surface PAR is measured continuously using a Biospherical Instruments QSR-240 Integrating PAR sensor. The profile data is commonly filtered to remove obvious data spikes and then binned into one-meter averages. Raymond C. Smith, Charles R. Booth, and Jeffrey L. Star, "Oceanographic biooptical profiling system," Appl. Opt. 23, 2791-2797 (1984).

Dataset-specific Instrument Name	Conductivity, Temperature, Depth
Generic Instrument Name	CTD - profiler
Dataset-specific Description	CTD measurements taken, CTD unit unidentified
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

EN198

Website	https://www.bco-dmo.org/deployment/57739
Platform	R/V Endeavor
Start Date	1989-06-28
End Date	1989-07-07
Description	post bloom cruise; 7 locations; 63°N 25°W to 59°N 14°W

Project Information

U.S. JGOFS North Atlantic Bloom Experiment (NABE)

Website: http://usjgofs.whoi.edu/research/nabe.html

Coverage: North Atlantic

One of the first major activities of JGOFS was a multinational pilot project, North Atlantic Bloom Experiment (NABE), carried out along longitude 20° West in 1989 through 1991. The United States participated in 1989 only, with the April deployment of two sediment trap arrays at 48° and 34° North. Three process-oriented cruises where conducted, April through July 1989, from R/V *Atlantis II* and R/V *Endeavor* focusing on sites at 46° and 59° North. Coordination of the NABE process-study cruises was supported by NSF-OCE award # 8814229. Ancillary sea surface mapping and AXBT profiling data were collected from NASA's P3 aircraft for a series of one day flights, April through June 1989.

A detailed description of NABE and the initial synthesis of the complete program data collection efforts appear in: Topical Studies in Oceanography, JGOFS: The North Atlantic Bloom Experiment (1993), Deep-Sea Research II, Volume 40 No. 1/2.

The U.S. JGOFS Data management office compiled a preliminary NABE data report of U.S. activities: Slagle, R. and G. Heimerdinger, 1991. U.S. Joint Global Ocean Flux Study, North Atlantic Bloom Experiment, Process Study Data Report P-1, April-July 1989. NODC/U.S. JGOFS Data Management Office, Woods Hole Oceanographic Institution, 315 pp. (out of print).

Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: http://usjgofs.whoi.edu/

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was

born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

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Funding

Funding Source	Award
National Science Foundation (NSF)	unknown NABE NSF

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