

Particulate matter concentration from filtered Niskin Bottles from R/V Atlantis II cruise AII-119-4 in the North Atlantic in 1989 (U.S. JGOFS NABE project)

Website: <https://www.bco-dmo.org/dataset/2601>

Version: January 14, 2003

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Project

» [U.S. JGOFS North Atlantic Bloom Experiment](#) (NABE)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

Contributors	Affiliation	Role
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Dataset Description

Particulate matter concentration from filtered Niskin Bottles

Methods & Sampling

PI: Wilford Gardner
of: Texas A & M University
dataset: Particulate matter concentration from filtered Niskin Bottles
dates: April 20, 1989 to May 10, 1989
location: N: 59.7418 S: 41.104 W: -23.022 E: -19.0205
project/cruise: North Atlantic Bloom Experiment/Atlantis II 119, leg 4
ship: R/V Atlantis II

Methodology

See: Gardner, W.D., I.D. Walsh, and M.J. Richardson, 1993. Biophysical forcing of particle production and distribution during a spring bloom in the North Atlantic. Deep-Sea Research II, Vol. 40, No. 1/2, pp. 171-195

PI-Notes:

Only stations at 47N (stations 11-23) were used in PMC vs Beam Cp calculations. Dregs means the water below the spigot was sampled on a separate filter. MP means a Millipore filter funnel was used to filter the water rather than in-line filtration because of the high concentrations.

The Dregs Concentration is the mass filtered from below the bottle spigots divided by the volume of the water filtered from below the spigots, so it includes the particles in the water at the time the bottle was closed. It is assumed that the excess particles below the spigots were distributed throughout the bottle at the time of closure (probably in the form of aggregates). The measured volume of the water bottles used in NABE was 29.6 liters.

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Data Files

File
pmc.csv (Comma Separated Values (.csv), 6.70 KB) MD5:10e0faa2ee439513cc8b06cde04f22b6 Primary data file for dataset ID 2601

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Parameters

Parameter	Description	Units
year	year (as YYYY)	YYYY
event	event number, from event log	MMDDhhmm
sta	station number from event log	dimensionless
cast	cast/operation number, numbered consecutively within station	dimensionless
bot	rosette bottle number	dimensionless
press	sample depth reported as pressure	decibars
PMC_kg_vol_filt	volume filtered (reported as mass)	kilograms
PMC_kg	particulate matter concentration	micrograms/kilogram
dregs_mass	weight of particulates in dregs volume filtered	micrograms
dregs_vol_filt	dregs volume filtered	liters
dregs_corr_conc	dregs corrected concentration	micrograms/liter
dregs_corr_fact	dregs correction factor	dimensionless
comments	indicates if a dregs sample was collected	free text

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	Niskin Rosette bottles were used to collect the water samples.
Generic Instrument Description	A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24, or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.

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Deployments

All-119-4

Website	https://www.bco-dmo.org/deployment/57737
Platform	R/V Atlantis II
Start Date	1989-04-17
End Date	1989-05-11
Description	early bloom cruise; 17 locations; 60N 21W to 46N 18W

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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 were 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).

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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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