

Particulate matter concentration from filtered Niskin Bottle samples from RVIB Nathaniel B. Palmer and R/V Roger Revelle cruises in the Southern Ocean, 1997-1998 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2750>

Version: November 14, 2001

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Project

» [U.S. JGOFS Antarctic Environment and Southern Ocean Process Study](#) (AESOPS)

Program

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

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Dataset Description

Particulate matter concentration from filtered Niskin Bottles

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Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number	
cast	CTD cast number	
PMC_rinse	filters rinsed with: distilled water (DW) or 1M Ammonium Formate (Formate)	
bot	rosette Niskin bottle number	
press	sample depth reported as pressure	decibars
depth	sample depth	meters
PMC_vol_filt	volume filtered for PMC measurement	liters
PMC	particulate matter concentration	micrograms/liter
beam_cp	beam attenuation due to particles	1/m

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	CTD clean rosette (Niskin) bottles were used to collect 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

NBP-97-01

Website	https://www.bco-dmo.org/deployment/57720
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p2.html
Start Date	1997-01-13
End Date	1997-02-11
Description	<p>Ross Sea Process Study 2</p> <p>Methods & Sampling PI: Wilford Gardner, Mary Jo Richardson of: Texas A&M University dataset: Particulate matter concentration from filtered Niskin Bottles dates: January 13, 1997 to February 07, 1997 location: N: -74.0029 S: -78.0498 W: 163.3383 E: -175.9927 project/cruise: AESOPS/NBP97-1 - Ross Sea Process 2 ship: R/V Nathaniel B. Palmer Methodology: Gardner, Chung, Richardson and Walsh, 1995, The Oceanic Mixed-Layer Pump, DSR II, v.42, 757-775 with modifications given in the transmissometer documentation.</p>

KIWI7

Website	https://www.bco-dmo.org/deployment/57725
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp1.html
Start Date	1997-12-02
End Date	1998-01-03
Description	<p>Polar Front Process I</p> <p>Methods & Sampling PI: Wilford Gardner, Mary Jo Richardson of: Texas A&M University dataset: Particulate matter concentration from filtered Niskin Bottles dates: December 05, 1997 to December 30, 1997 location: N: -52.9143 S: -64.7418 W: -174.7303 E: -168.8332 project/cruise: AESOPS/KIWI07 - APFZ Polar Front Process 1 ship: R/V Roger Revelle Methodology: Gardner, Chung, Richardson and Walsh, 1995, The Oceanic Mixed-Layer Pump, DSR II, v.42, 757-775 with modifications given in the transmissometer documentation.</p>

KIWI9

Website	https://www.bco-dmo.org/deployment/57727
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp2.html
Start Date	1998-02-13
End Date	1998-03-19
Description	<p>Polar Front Process II</p> <p>Methods & Sampling PI: Wilford Gardner, Mary Jo Richardson of: Texas A&M University dataset: Particulate matter concentration from filtered Niskin Bottles dates: February 15, 1998 to March 15, 1998 location: N: -52.967 S: -71.3157 W: -174.7338 E: -165.9143 project/cruise: AESOPS/KIWI09 - APFZ Polar Front Process 2 ship: R/V Roger Revelle Methodology: Gardner, Chung, Richardson and Walsh, 1995, The Oceanic Mixed-Layer Pump, DSR II, v.42, 757-775 with modifications given in the transmissometer documentation.</p>

Project Information

U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

Website: <http://usjgofs.whoi.edu/research/aesops.html>

Coverage: Southern Ocean, Ross Sea

The U.S. Southern Ocean JGOFS program, called Antarctic Environment and Southern Ocean Process Study (AESOPS), began in August 1996 and continued through March 1998. The U.S. JGOFS AESOPS program focused on two regions in the Southern Ocean: an east/west section of the Ross-Sea continental shelf along 76.5°S, and a second north/south section of the Southern Ocean spanning the Antarctic Circumpolar Current (ACC) at ~170°W (identified as the Polar Front). The science program, coordinated by Antarctic Support Associates (ASA), comprised eleven cruises using the R.V.I.B Nathaniel B. Palmer and R/V Roger Revelle as observational platforms and for deployment and recovery of instrumented moorings and sediment-trap arrays. The Ross-Sea region was occupied on six occasions and the Polar Front five times. Mapping data were obtained from SeaSoar, ADCP, and bathymetric systems. Satellite coverage was provided by the NASA SeaWiFS and the NOAA/NASA Pathfinder programs.

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).