

Fast Repetition Rate Fluorometry from CTD casts from R/V Roger Revelle KIWI9 cruiss in the Southern Ocean, 1998 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2779>

Version: December 11, 2001

Version Date: 2001-12-11

Project

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

Program

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

Contributors	Affiliation	Role
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Dataset Description

Fast Repetition Rate Fluorometry from CTD casts

Methods & Sampling

PI: Rob Olson and Heidi Sosik
of: Woods Hole Oceanographic Institution
dataset: Fast Repetition Rate Fluorometry from CTD casts
dates: February 14, 1998 to March 15, 1998
location: N: -49.9867 S: -71.3157 W: -178.826 E: -165.9145
project/cruise: AESOPS/KIW9 - APFZ Polar Front Process 2 cruise
ship: R/V Roger Revelle

[Sampling Methodology](#)

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Data Files

File
FRRFluorometry.csv (Comma Separated Values (.csv), 85.85 KB) MD5:bb1b989c2b2ef93bf7a430d404fc83ee
Primary data file for dataset ID 2779

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Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
cast	cast number	
depth	depth in the water column	meters
Fo	initial value of chlorophyll fluorescence yield before light saturation	relative
Fm	final value of chlorophyll fluorescence yield after saturation of photosynthetic reaction centers	relative
Fv_Fm_ratio	normalized variable fluorescence, equivalent to (Fm-Fo)/Fm	dimensionless
sigma_PSII	photosystem II (PSII) functional absorption cross-section	angstrom ²
tau_PSII	photosystem II turnover time	microseconds

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Instruments

Dataset-specific Instrument Name	Fluorometer
Generic Instrument Name	Fluorometer
Dataset-specific Description	A battery-powered FRR fluorometer with internal data logging (Chelsea Instruments, Ltd. FASTtracka) was used to measure FRR fluorometer data.
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	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

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	Polar Front Process II

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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.

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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 processes 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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