Simrad acoustic data from RVIB Nathaniel B. Palmer cruise NBP0204 in the Southern Ocean in 2002 (SOGLOBEC project; Southern Ocean Krill project)

Website: https://www.bco-dmo.org/dataset/2383
Version: 1
Version Date: 2002-09-16

Project
» U.S. GLOBEC Southern Ocean (SOGLOBEC)
» GLOBEC: Winter Distribution and Success of Southern Ocean Krill (Southern Ocean Krill)

Programs
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Contributors	Affiliation	Role
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Allison, Dicky	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Abstract
Simrad acoustic data from RVIB Nathaniel B. Palmer cruise NBP0204 in the Southern Ocean in 2002 (SOGLOBEC project; Southern Ocean Krill project)

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Dataset Description

Information file for processing and plotting simrad files

The original telegrams from the simrad EK500 for 38, 120, 200 kHz transducers are transmitted to RVDAS via RS232 at 115kb and logged daily with a new file started at 0000 GMT (2000 h local). To process the raw simrad output, the perl script simandmwaythen.pl (written by Karen Fisher) picks up the day.dat file, which must be set by the user, and loads and outputs a series of files for each frequency and time. The matlab m file, simthenplotter_2.m, picks up the output from the perl script, plots and then saves mat files. The m file called plotsimrad.m asks you for the matlab filename and plots the output.

All the matlab files for each day of NBP0204 are available in gz zipped format. All the user needs to do is to unzip the mat file of choice, and run plotsimrad.m. You do not need to go back to the raw data if you just wish to plot data for a particular day or time window. The data in the *.mat files are corrected for the offset produced by the noise margin setting on the simrad and calibrated by cross correlation with data from biomaperII when it was in the water at the same time. This is not a true calibration since the accuracy is unknown, but it probably gives correct backscatter intensity within a few db. The range is -100 to -40 and color scaled (thanks to Gareth Lawson) in the plots just as in the output from biomaperII.

plotsimrad.m allows you to select the times within a given day to plot so you can "zoom in" on specific activites such as CTD or MOCNESS casts. The perl script is made available in case the user wishes to go back to the raw data and re-process for some reason. There is also have a script to cross plot backscatter intensity against

temperature gradient data from the CTD and CMIPS during each cast. Contact Scott Gallager if you are interested.

Note about downloading the above program files:
When you click on the above links, the perl script and the matlab files may be output to your browser window. To download them, use 'save as' at your browser's file menu. You can avoid the screen output and download directly by first holding the 'shift' key and then clicking on the link.

Other helpful files:
cmap.m
initialize_simradplot.m

16 sept 2002
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Methods & Sampling

The original telegrams from the simrad EK500 for 38, 120, 200 kHz transducers are transmitted to RVDAS via RS232 at 115kb and logged daily with a new file started at 0000 GMT (2000 h local).

Data Processing Description

To process the raw simrad output, the perl script simandmwaythen.pl (written by Karen Fisher) picks up the day.dat file, which must be set by the user, and loads and outputs a series of files for each frequency and time. The matlab m file, simthenplotter_2.m, picks up the output from the perl script, plots and then saves mat files. The m file called plotsimrad.m asks you for the matlab filename and plots the output.

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Parameters

Parameters for this dataset have not yet been identified

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Instruments

Dataset-specific Instrument Name	Echo Sounder
Generic Instrument Name	Echo sounder - single-beam
Dataset-specific Description	Used to measure the water depth. SIMRAD EK 500
Generic Instrument Description	A single-beam echo sounder is an instrument that measures water depth at a single point below the platform by timing pulses of sound reflected on the seafloor. The echo sounder transmits and receives sound, accurately measuring the time it takes to leave the sounder, reach the bottom and return to the sounder. It then converts this information into digital or graphic representations of the bottom depth and relief. The average echo sounder consists of a transmission and reception unit that sends sound signals through the water, receives and decodes information and converts that information into either a graphic or visual form. Attached to the receiver is a transducer that acts as a microphone and a speaker under the water. Sound waves travel at approximately 1500 m/s through the water dependent on water temperature". more from LMS Technologies

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Deployments

NBP0204

Website	https://www.bco-dmo.org/deployment/57643
Platform	RVIB Nathaniel B. Palmer
Report	http://globec.whoi.edu/so-dir/reports/nbp0204/nbp0204b.html
Start Date	2002-07-31
End Date	2002-09-18
Description	Also see NBP0204 Cruise Data Report **Methods & Sampling** The original telegrams from the simrad EK500 for 38, 120, 200 kHz transducers are transmitted to RVDAS via RS232 at 115kb and logged daily with a new file started at 0000 GMT (2000 h local). **Processing Description** To process the raw simrad output, the perl script http://globec.whoi.edu/so-dir/data/simandmwaythen.pl"> simandmwaythen.pl (written by Karen Fisher) picks up the day.dat file, which must be set by the user, and loads and outputs a series of files for each frequency and time. The matlab m file, http://globec.whoi.edu/so-dir/data/simthenplotter_2.m">simthenplotter_2...., picks up the output from the perl script, plots and then saves mat files. The m file called http://globec.whoi.edu/so-dir/data/plotsimrad.m">plotsimrad.m asks you for the matlab filename and plots the output.

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Project Information

U.S. GLOBEC Southern Ocean (SOGLOBEC)

Website: http://www.ccpo.odu.edu/Research/globec_menu.html

Coverage: Southern Ocean

The fundamental objectives of United States Global Ocean Ecosystems Dynamics (U.S. GLOBEC) Program are dependent upon the cooperation of scientists from several disciplines. Physicists, biologists, and chemists must make use of data collected during U.S. GLOBEC field programs to further our understanding of the interplay of physics, biology, and chemistry. Our objectives require quantitative analysis of interdisciplinary data sets and, therefore, data must be exchanged between researchers. To extract the full scientific value, data must be made available to the scientific community on a timely basis.

GLOBEC: Winter Distribution and Success of Southern Ocean Krill (Southern Ocean Krill)

Coverage: Southern Ocean

The U.S. Global Ocean Ecosystems Dynamics (U.S. GLOBEC) program has the goal of understanding and ultimately predicting how populations of marine animal species respond to natural and anthropogenic changes in climate. Research in the Southern Ocean (SO) indicates strong coupling between climatic processes and ecosystem dynamics via the annual formation and destruction of sea ice. The Southern Ocean GLOBEC Program (SO GLOBEC) will investigate the dynamic relationship between physical processes and ecosystem responses through identification of critical parameters that affect the distribution, abundance and population dynamics of target species. The overall goals of the SO GLOBEC program are to elucidate shelf circulation processes and their effect on sea ice formation and krill distribution, and to examine the factors which govern krill survivorship and availability to higher trophic levels, including penguins, seals and whales. The focus of the U.S. contribution to the international SO GLOBEC program will be on winter processes. This component will focus on juvenile and adult krill and mesozooplankton prey distribution and abundance using a sophisticated instrument package, BIOMAPPER II, which is equipped with an acoustic backscatter sonar system, a video plankton recorder and an environmental sensor system. The system is used in large-scale studies. Additionally, a remotely-operative vehicle will be used to map the distribution and behavior of krill under ice. The result of the integrated SO GLOBEC program will be to improve the predictability of living marine resources, especially with respect to local and global climatic shifts.

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Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

Funding Source	Award
NSF Antarctic Sciences (NSF ANT)	ANT-9910307

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