CTD data collected during MOCNESS-10 deployments from ARSV Laurence M. Gould LMG0602 in the Southern Ocean from February to March 2006 (SouthernSalps project)

Website: https://www.bco-dmo.org/dataset/2918
Data Type: Cruise Results
Version: Final
Version Date: 2018-03-27

Project
» Salpa Thompsoni in the Southern Ocean: Bioenergetics, Population Dynamics and Biogeochemical Impact (SouthernSalps)

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Coverage

Spatial Extent: **N**:-62.3433 **E**:-64.2567 **S**:-63.95 **W**:-66.85
Temporal Extent: 2006-02-20 - 2006-03-08

Dataset Description

CTD data collected during MOCNESS-10 deployments. CTD attached to MOCNESS-10 frame.

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Data Files

File
mocness_ctd.csv (Comma Separated Values (.csv), 7.90 MB)   MD5:fe6290ebc8d941b8da747803aa5bf20a   Primary data file for dataset ID 2918

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Parameters

Parameter	Description	Units
cruiseid	cruise identification, e.g. NBP0202, for RVIB Palmer cruise 0202	
temp	temperature of water	degrees C
datatype	sampling method - instrument type, e.g. MOCNESS-1 or MOCNESS-10	
year	year	
tow	tow number	
day_local	day of month, local time, 1-31	
month_local	month of year, local time, 1 - 12	
yrday_local	year day as a decimal, based on Julian calendar, local; includes time due to precision	YYY.Yyyyyy
time_local	time, local using 24 hour clock to decimal minutes	HHmm.m
press	depth of observation or sample	meters
potemp	potential temperature or theta1 [1]Fofonoff and Millard, 1983, UNESCO technical papers in Marine Sciences, #44	
sal	salinity calculated from conductivity, bad values are set to 50	
sigma_0	potential density1 [1]Fofonoff and Millard, 1983, UNESCO technical papers in Marine Sciences, #44	
angle	angle of net frame relative to vertical (0-89 degrees)	degrees
flow	consecutive flow counts	
hzvel	horizontal net velocity	m/min
vtvel	vertical net velocity	m/min
vol_filt	volume filtered	meters3
net	MOCNESS net number, (00-08)	
lat	latitude, negative = South	DD.D
lon	longitude, negative = West	DDD.D
station	Station number where tow was done.	text
flvolt	fluorescence in volts	volts

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Instruments

Dataset-specific Instrument Name	Conductivity, Temperature, Depth
Generic Instrument Name	CTD - profiler
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.

Dataset-specific Instrument Name	CTD MOCNESS
Generic Instrument Name	CTD MOCNESS
Generic Instrument Description	The CTD part of the MOCNESS includes 1) a pressure (depth) sensor which is a thermally isolated titanium strain gauge with a standard range of 0-5000 decibars full scale, 2) A Sea Bird temperature sensor whose frequency output is measured and sent to the surface for logging and conversion to temperature by the software in the MOCNESS computer (The system allows better than 1 milli-degree resolution at 10 Hz sampling rate), and 3) A Sea Bird conductivity sensor whose output frequency is measured and sent to the surface for logging and conversion to conductivity by the software in the computer (The system allows better than 1 micro mho/cm at 10 Hz sampling rate). The data rate depends on the speed of the computer and the quality of the cable. With a good cable, the system can operate at 2400 baud, sampling all variables at 2 times per second. One sample every 4 seconds is the default, although the hardware can operate much faster. (From The MOCNESS Manual)

Deployments

LMG0602

Website	https://www.bco-dmo.org/deployment/57843
Platform	ARSV Laurence M. Gould
Start Date	2006-02-14
End Date	2006-03-16
Description	The goal of the LMG06-02 cruise was to continue the studies begun in 2004 (LMG04-14) on the population biology, feeding, and energetics of Salpa thompsoni in the waters near the Antarctic Peninsula.

Project Information

Salpa Thompsoni in the Southern Ocean: Bioenergetics, Population Dynamics and Biogeochemical

Impact (SouthernSalps)

Coverage: Southern Ocean

This project is also referred to as "B-307: Salpa thompsoni in the Southern Ocean". (B-307 was the USAP project/event number).

NSF Award Abstract:
Salps are planktonic grazers that have a life history, feeding biology and population dynamic strikingly different from krill, copepods or other crustacean zooplankton. Salps can occur in very dense population blooms that cover large areas and have been shown to have major impacts due to the their grazing and the production of fast-sinking fecal pellets. Although commonly acknowledged as a major component of the Southern Ocean zooplankton community, often comparable in biomass and distribution to krill, salps have received relatively little attention. Although extensive sampling has documented the seasonal abundance of salps in the Southern Ocean, there is a paucity of data on important rates that determine population growth and the role of this species in grazing and vertical flux of particulates. This proposed study will include: measurements of respiration and excretion rates for solitary and aggregate salps of all sizes; measurements of ingestion rates, including experiments to determine the size or concentration of particulates that can reduce ingestion; and determination of growth rates of solitaries and aggregates. In addition to the various rate measurements, this study will include quantitative surveys of salp horizontal and vertical distribution to determine their biomass and spatial distribution, and to allow a regional assessment of their effects. Measurements of the physical characteristics of the water column and the quantity and quality of particulate food available for the salps at each location will also be made. Satellite imagery and information on sea-ice cover will be used to test hypotheses about conditions that result in high densities of salps. Results will be used to construct a model of salp population dynamics, and both experimental and modeling results will be interpreted within the context of the physical and nutritional conditions to which the salps are exposed. This integrated approach will provide a good basis for understanding the growth dynamics of salp blooms in the Southern Ocean. Two graduate students will be trained on this project, and cruise and research experience will be provided for two undergraduate students. A portion of a website allowing students to be a virtual participant in the research will be created to strengthen students' quantitative skills. Both PI's will participate in teacher-researcher workshops, and collaboration with a regional aquarium will be developed in support of public education.

Funding

Funding Source	Award
NSF Antarctic Sciences (NSF ANT)	ANT-0338090