Snow pit data: temperature, density, stratigraphy at various depths from ARSV Laurence M. Gould LMG0106, LMG0205 in the Southern Ocean from 2001-2002 (SOGLOBEC project)

Website: https://www.bco-dmo.org/dataset/3125
Data Type: Cruise Results
Version: 1
Version Date: 2009-05-18

Project
» U.S. GLOBEC Southern Ocean (SOGLOBEC)

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

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Abstract
Snow pit data: temperature, density, stratigraphy at various depths from ARSV Laurence M. Gould LMG0106, LMG0205 in the Southern Ocean from 2001-2002 (SOGLOBEC project).

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Coverage

Spatial Extent: **N**:-65.5233 **E**:-66.6783 **S**:-68.665 **W**:-76.1783
Temporal Extent: 2001-07-28 - 2002-09-08

Dataset Description

Snowpits were dug at selected locations along the ice survey lines. Vertical profiles of snow temperature, density, grain size, and grain type were measured. Ice and slush layers were also noted. Results from the 22 snowpits examined in 2001 and the 16 snowpits examined in 2002 are summarized.

Related datasets:
ice thickness, ice optics, sea ice, ice properties

Methods & Sampling

The convention is the zero height, or zero depth is the bottom of the snowpack.

Snow pits were conducted to measure the temperature, salinity, density and ï„18O profile through the snow pack as well as a visual description of grain size, crystal form and hardness of each layer of snow. Many of the sites had an ice surface that was below freeboard due to snow loading. This created a salty slush layer on top of the sea ice that had salinities well above the salinity of seawater and were 10-20 cm thick in places. This slush layer also had a wicked layer of snow above it where the snow was wicking the brine up into the snow pack, 10 cm in places.

Data Files

File
snow_pits.csv (Comma Separated Values (.csv), 26.95 KB) MD5:ed325bf368518cf3341d1e66deb1617a Primary data file for dataset ID 3125

Parameters

Parameter	Description	Units
year	year, reported as YYYY, e.g. 1995	
cruise_id	cruise designation; name	
event	event or operation number	
date_local	local month, day and year	
month_local	month of year, local time , i.e. 01-12	
day_local	day, local time e.g. 22.	
yrday_local	local day and decimal time, as 326.5 for the 326th day of the year, or November 22 at 1200 hours (noon).	
snow_depth	snow layer thickness	centimeters
lat	latitude, in decimal degrees, North is positive, negative denotes South	decimal degrees
lon	longitude, in decimal degrees, East is positive, negative denotes West	decimal degrees
station	consecutive station number	
temp_air	air temperature	degrees Celsius
site	Southern Ocean site identification	
depth_temp	depth at which temperature was recorded	degrees Celsius
temp	temperature at measurement depth	degrees Celsius
depth_dens	depth at which density was recorded	centimeters
density	density, kilograms/meter3	kg/m^3
depth_strat	depth range at which stratigraphy was recorded	centimeters
strat_type	description of snow in a given stratigraphic layer	
strat_thick	thickness of a given stratigraphic layer	millimeters
depth_wet	thickness of wet layer	centimeters
wetness	relative moisture of snow: dry, moist or very wet	

Deployments

LMG0106

Website	https://www.bco-dmo.org/deployment/57639
Platform	ARSV Laurence M. Gould
Report	http://www.ccpo.odu.edu/Research/globec/cruises01/lmg0106_menu.html
Start Date	2001-07-21
End Date	2001-09-01

LMG0205

Website	https://www.bco-dmo.org/deployment/57644
Platform	ARSV Laurence M. Gould
Report	http://www.ccpo.odu.edu/Research/globec/main_cruises02/lmg0205/report_lmg0205.pdf
Start Date	2002-07-29
End Date	2002-09-18

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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.

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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-9910122
NSF Antarctic Sciences (NSF ANT)	ANT-9910179