MIRAI MR13-06 Leg2 Bathymetry (MBES)

Last Modified: 2019-01-29

ReadMe | Observation Data | Data Format

Cruise ID: MR13-06 Leg2
Bathymetry (MBES): Processed (DMO)-Basic
Data Policy: JAMSTEC
Observation Items: Depth
Science Keywords:

OCEANS	> BATHYMETRY/SEAFLOOR TOPOGRAPHY	> BATHYMETRY
SOLID EARTH	> GEOMOROHOLOGY	

Cruise Report
http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR13-06_leg1-2_all.pdf

For Using Data

Principal Investigator
Data Management Office

Use Constraints
See Terms and Conditions about constrain of use.

Data Citation
See Terms and Conditions about data citation.

Instrument

Instrument:
Multi beam echo sounder (MR12-01 Leg1 - MR14-02)

Overview

The data provided here are the bathymetric data obtained from the multibeam echo sounder system (MBES). The system transmits the shape echo sounder beam from the transmitter and receives the beam reflected from the seabed using the hydrophone. The water depth is calculated from the travel time of the beam between the transmitter and the receiver. Having many transmitters make fan beams across the keel, this system can obtain a lot of bathymetric data on a wide angle at once.

The travel time of the beam (from the transmitter to the seabed and from the seabed to the receiver) is corrected using the vertical profile of the sound velocity obtained from the in-situ observations. (see section Sound velocity profile correction). The raw data with the low reliability such as the noise are removed using the software (see section Processed data).

Measurement System

Manufacturer:	Elac
Type :	SeaBeam3012(Shipboard System), SeaBeam2112(Transducer)
Frequency :	12kHz
Swath angle:	Max 150°
Beam angle:	2 * 2°
Beam number:	151
Range:	50m - 11,000m
Accuracy (Depth):	Center beam [Depth (m) * 0.2%], Side beam [Depth (m) * 0.5%]

Sound velocity profile correction

In the survey area, the sound velocity profile correction is made using the XBT data acquired during the cruise. On the other hand, in the transit area, e.g., from the survey area to the port, where we do not conduct the XBT observations, the data are corrected using the historical XBT and XCTD data or the Argo float data. Processed data is interpolated onto 100m grid data, and output as ascii data.

Processed Data

Following raw data with the low reliability are removed using the processing software "CARIS HIPS and SIPS Version 9.1" of Teledyne Technologies Inc.

- Navigation error data
- The Data exceeded the “Range” in the Measurement system section
- The Data with swath angle exceeded 60 degrees
- Spike noise data (If both of slopes calculated from the evaluated beam and prior/post one on the same swath are less more than 15 degrees.)
- The Bottom lost data due to the sea state etc.
- The data which came off from the sea bottom(Surface Cleaning with CARIS : Cleaning parameter=threshold 2σ(95.44%), Surface parameter=tilted plane, threshold 2σ(95.44%))

The data quality is different in the survey and transit area because of the difference of the temperature data for the sound velocity profile correction. Therefore, we open the survey and transit area data separately. The rule of the file name is as follows.

File name :

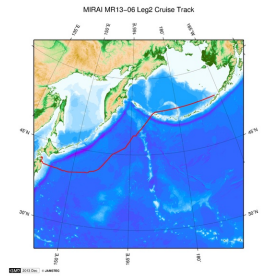
- Survey area data : XXXX.dat
- Transit area data: XXXX_t.dat

XXXX indicates cruise ID.
"_t" indicates the transit area data.

Note

(1) Geodetic system: WGS84
(2) The tide is not corrected.
(3) If you would like the raw data set, please contact us from "Contact Us" above.

Related Information



Enlarge Image

MR13-06 Leg2
Ship Name: MIRAI
Period: 2013-10-09 - 2013-10-20
Chief Scientist: Shigeto Nishino (JAMSTEC)
Project Name: [Arctic Ocean Climate System Reaserch]
Proposal Title: ▸ Study on environmental changes in the sea-ice reduction regions of the Arctic Ocean

Update History

2019-01-29	An observation data was registerd.

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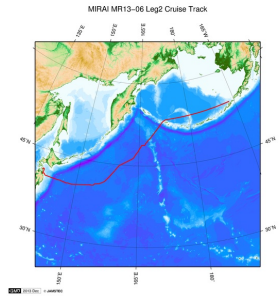
Bathymetry XYZ

The one record length of the Processed Data file is 33 bytes.

No.	Column	Description	Format	Unit	Remarks
1	1 - 11	Longitude	f11.6	degree	+ : Eastern hemisphere - : Western hemisphere
2	13 - 22	Latitude	f10.6	degree	+ : Northern hemisphere - : Southern hemisphere
3	24 - 31	Depth	f9.3	m	
4	32 - 33	Terminator	a2		[CR][LF]

Related Information



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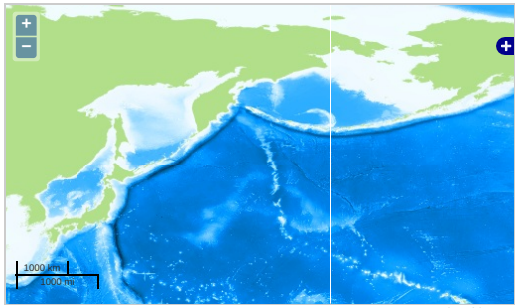
Observation Map



Imagery reproduced from ...

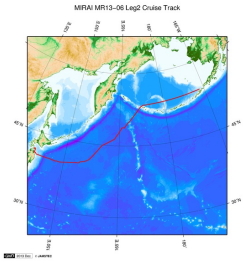
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

Add to Basket

File names
MR13-06_leg2.dat.zip

Related Information



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