

MIRAI MR16-06 Bathymetry (MBES)

Last Modified: 2019-04-25

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: [MR16-06](#)

Bathymetry (MBES): Processed (DMO)-Basic

Data Policy: [JAMSTEC](#)

Observation Items: Depth

Science Keywords:

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

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR16-06_all.pdf

For Using Data

Principal Investigator

Data Management Office

Use Constraints

See [Terms and Conditions](#) about constrain of use.

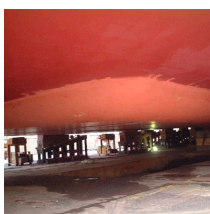
Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

Instrument:

Multi beam echo sounder (MR14-03 -)



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
Frequency : 12kHz
Swath angle: Max 150°
Beam angle: 2 * 1.6°
Beam number: 301
Range: 50m - 11,000m
Accuracy (Depth): Depth (m) * 1%

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

Following raw data with the low reliability are removed using the processing software "CARIS HIPS and SIPS Version 9.1" of Teledyne Technologies Inc. Processed data is interpolated onto 100m grid data, and output as ascii data.

- 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 exceeded 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_L.dat

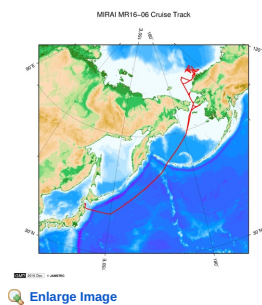
XXXX indicates cruise ID.

"_L" 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



MR16-06

Ship Name: MIRAI
Period: 2016-08-22 - 2016-10-05
Chief Scientist: Shigeto Nishino (JAMSTEC)
Project Name: [Arctic Ocean Climate System Research]
Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement
Title:

Update History

| Update Date | Update Content |
|-------------|-------------------------------------|
| 2019-04-25 | An observation data was registered. |

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KAIMEI
SHINSEI MARU
HAKUHO MARU

Information of the Submersibles
KAIKO
SHINKAI 2000
SHINKAI 6500
DEEP TOW
HYPER-DOLPHIN
URASHIMA
YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB
SAMPLER (SHELL)
POWER GRAB
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BMS

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Dive ID:

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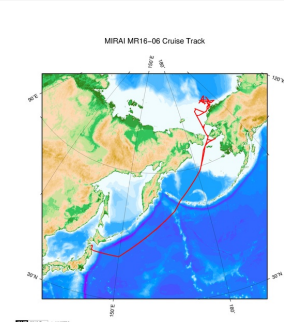
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Bathymetry XYZ

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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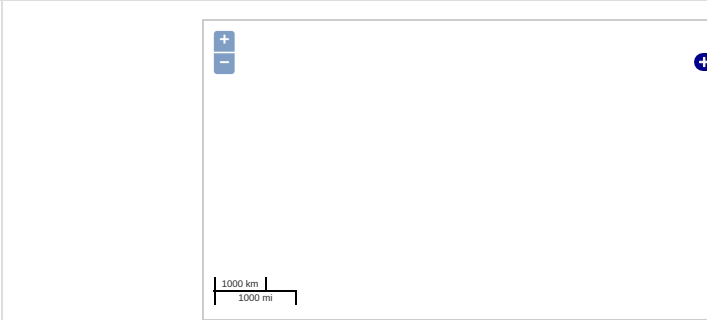
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Observation Map



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

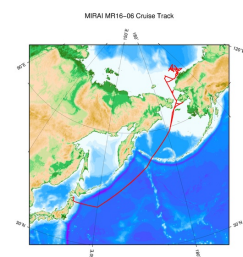
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File names

☐ MR16-06.dat.zip

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