

## MIRAI MR12-02 Leg1 Bathymetry (MBES)

Last Modified: 2019-04-13

**ReadMe** Observation Data Data Format

Cruise ID: [MR12-02 Leg1](#)

Bathymetry (MBES): Processed (DMO)-Basic

Data Policy: [JAMSTEC](#)

Observation Items: Depth

Science Keywords:

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

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR12-02\\_leg1-2\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR12-02_leg1-2_all.pdf)

### For Using Data

#### Principal Investigator

Data Management Office

#### Use Constraints

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

#### Data Citation

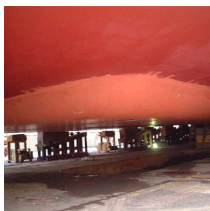
See [Terms and Conditions](#) about data citation.

### 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

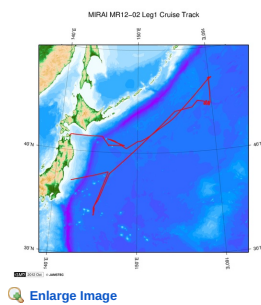
XXXX indicates cruise ID.

"\_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



#### MR12-02 Leg1

Ship Name: MIRAI  
Period: 2012-06-04 - 2012-06-24  
Chief Scientist: Makio Honda (JAMSTEC)  
Project Name: [Station K2, Station KNOT]  
Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback  
Title:

#### Update History

2019-04-13	An observation data was registered.
2019-01-12	An observation data was registered.
2019-01-09	An observation data was registered.
2013-06-28	An observation data was registered.

#### JAMSTEC

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#### Information of the Ships

NATSUSHIMA  
KAIYO  
YOKOSUKA  
MIRAI  
KAIREI  
CHIKYU  
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  
SAMPLER (CLOW)  
BMS

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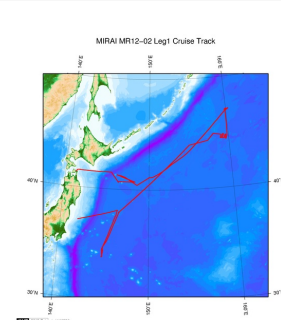
Data Policy: [JAMSTEC](#)

### 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



[Enlarge Image](#)

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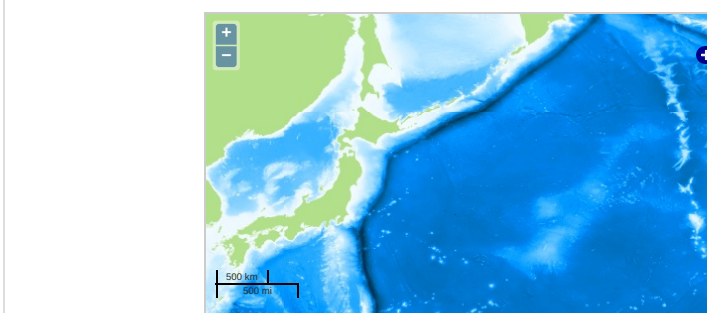
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### Observation Map



Imagery reproduced from ...

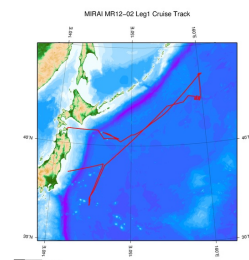
### Data List

[Add to Basket](#)

#### File names

☐ MR12-02\_leg1.dat.zip

### Related Information



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