

For Using Data

Data Policy	JAMSTEC
Principal Investigator	Data Management Office
Use Constraints	See Terms and Conditions about constrain of use.
Data Citation	See Terms and Conditions about data citation.

Quality level

Processed(DMO)-Basic

Instrument

Multi-narrow beam echo sounder for shallow water (MBES-S)



Multi-narrow beam echo sounder for deep water (MBES-D)



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 Data processing).

Measurement System

	Multi-narrow beam echo sounder for shallow water (MBES-S)	Multi-narrow beam echo sounder for deep water (MBES-D)
Manufacturer :	Teledyne RESON	Elac
Type :	SeaBat7125SV2	SeaBeam3020
Frequency :	200 kHz or 400 kHz	20 kHz
Swath angle :	max 165 degree	max 140 degree
Beam angle :	1.0 * 2.0 degree (200 kHz) 0.5 * 1.0 degree (400 kHz)	1 * 1 degree
Beam number :	256 (200 kHz), 512 (400 kHz)	301
Range :	0.5 m - 450 m	50 m - 7,000 m
Accuracy (Depth) :	Compliance with IHO S-44 over entire depths range	Compliance with IHO S-44 for depths greater than 100 metres

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.

Data processing

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 :

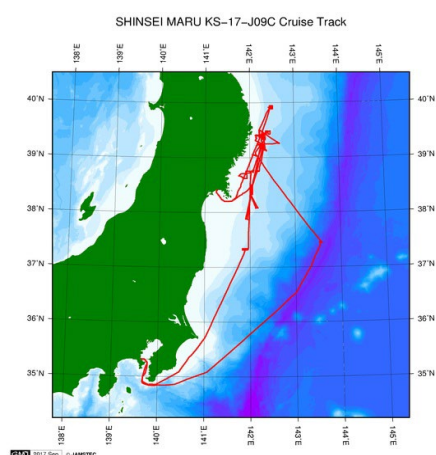
- Survey area data : XXXX.dat
- Transit area data : XXXX_t.dat

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

Note

- 1) Geodetic system : WGS84.
- 2) The tide is not corrected.
- 3) MBES-S data was collected in this cruise, but we have no plan to process the MBES-S data.
- 4) This data was corrected for the sound velocity, without the surface sound velocity sensor data.
Therefore, data quality may be degraded.
- 5) If you would like the raw data set, please contact DMO at "dmo@jamstec.go.jp".

Related Information



KS-17-J09C

Ship Name:	SHINSEI MARU
Period:	2017/07/08 - 2017/07/26
Chief Scientist:	Shinji Tsuchida (JAMSTEC)
Project Name:	[Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]
Proposal:	Researches on marine ecosystem dynamics in the Tsunami affected area off Sanriku

Format Description for Bathymetry XYZ

No.	Column	Content	Format	Unit	Remarks
1	1 - 11	Longitude	f11.6	degree	+ : Eastern hemisphere - : Western hemisphere
2	13 - 22	Latitude	f10.5	degree	+ : Northern hemisphere - : Southern hemisphere
3	24 - 31	Depth	f9.3	m	
4	32 - 33	Terminator	a2		[CR][LF]