

MIRAI MR10-01 Leg1 Navigation

Last Modified: 2014-08-06

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

Cruise ID: [MR10-01 Leg1](#)

Navigation: Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items:

Science Keywords:

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR10-01_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:

Radio navigation system



Overview

The following information is continuously collected and recorded as the Navigation QCed data during the cruise of R/V MIRAI.

Location
Meteorological elements
Surface temperature
Current direction and velocity
Water depth

Data are recorded every one minute, and data file named after cruise code.

System

Manufacturer: SENA Co., Ltd

Model: Sena Advanced Integrated Navigation System version 19 for MIRAI

Data format version 02.6

Sensor specifications

1) GPS

Manufacturer: Trimble Navigation Limited (Receiver)

Fugro Survey Limited (D-GPS)

Model: SPS751 (Receiver)

Starfix-XP (D-GPS)

Receiver location: Navigation deck [starboard side]

Navigation deck [port side]

Output data: NMEA (D-GPS)

Manufacturer: Trimble Navigation Limited

Model: 4000DS

Receiver location: Navigation deck [starboard side]

Navigation deck [port side]

Output data: NMEA

2) Doppler sonar

Manufacturer: FURUNO ELECTRIC CO., LTD

Model: DS-30

Range: Ship speed:

-10.00 - +40.00knot [Cross direction]

-9.99 - +9.99knot [Horizontal direction]

Current direction and speed:

0.0 - 9.9knot [All direction]

accuracy: Current speed:

+(2.0%+0.2knot)

3) Multi narrow beam echo sounder

Manufacturer: SEABEAM INSTRUMENTS

Model: Sea Beam 2112.004

Frequency: 12kHz

Range: 50 - 11000m

4) Anemometer

Manufacturer: Koshin Denki Kogyo Co., Ltd

Type: KE-500

Altitude: 24m (above sea level)

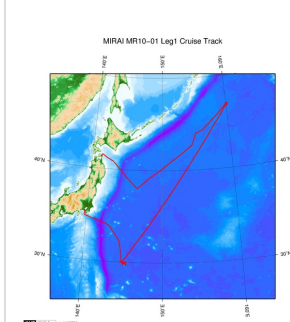
Starting wind speed: 0.2m/s or less
Durability: 90m/s
Accuracy: 10m/s or less +/- 0.5m/s
10 m/s or more +/-5%

Note

Please see the 'data set' and 'readme' for the detail of the following observation.

Air temperature: Meteorological data
Sea surface temperature: EPCS/TSG
Atmospheric pressure: Meteorological data
Relative humidity: Meteorological data
Water depth: Bathymetry
Current direction/speed: ADCP

Related Information



[Enlarge Image](#)

MR10-01 Leg1

Ship Name: MIRAI
Period: 2010-01-19 - 2010-02-06
Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)
Project Name: [Station K2, Station S1, Station KEO, Station KNOT]
Proposal ▶ Change in material cycles and ecosystem by the climate change and its feed back
Title:

Update History

| | |
|------------|------------------------------------|
| 2014-08-06 | An observation data was registerd. |
| 2012-09-28 | An observation data was registerd. |

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KAIYO
YOKOSUKA
MIRAI
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KAIMEI
SHINSEI MARU
HAKUHO MARU

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6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER (SHELL)
POWER GRAB SAMPLER (CLOW)
BMS

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:



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Navigation Qced

The one record of this data has 117 bytes of data part and 12 bytes of flag part.

Data part

| No. | Column | Content | Format | Unit | Remarks |
|-----|-----------|----------------------------------|---------------|-----------------|--|
| 1 | 1 - 8 | Date | i4,i2,i2 | | YYYYMMDD (UTC) |
| 2 | 10 - 15 | Time | i2,i2,i2 | | hhmmss (UTC) |
| 3 | 17 - 19 | Datum | a3 | | W84:WGS84 TD_:TOKYO DATUM |
| 4 | 21 - 31 | Latitude | i2,x1,f7.4,a1 | degree - minute | dd-mm.mmmmN(S) |
| 5 | 33 - 44 | Longitude | i3,x1,f7.4,a1 | degree - minute | ddd-mm.mmmmE(W) |
| 6 | 46 - 49 | Ship speed (Ground) | f4.1 | knot | |
| 7 | 51 - 55 | Course (Ground) | f5.1 | degree | |
| 8 | 57 - 60 | Ship speed (Water) | f4.1 | knot | *1 |
| 9 | 62 - 66 | Gyro | f5.1 | degree | |
| 10 | 68 - 72 | Air temperature | f5.1 | deg-C | |
| 11 | 74 - 78 | Sea surface temperature (SST) | f5.2 | deg-C | |
| 12 | 80 - 85 | Atmospheric pressure | f6.1 | hPa | Adjusted to the sea surface level |
| 13 | 87 - 89 | Relative humidity | i3 | % | |
| 14 | 91 - 93 | True wind direction | i3 | degree | Averaged over the previous 6 seconds *2 |
| 15 | 95 - 98 | True wind speed | f4.1 | m/sec | Averaged over the previous 6 seconds *2 No anemometer height adjustment |
| 16 | 100 - 106 | Depth | f7.1 | m | |
| 17 | 108 - 112 | Current direction | f5.1 | degree | Calculated value |
| 18 | 114 - 117 | Current speed | f4.1 | knot | Calculated value |

Flag part

| No. | Column | Description | Format | Remarks |
|-----|--------|-------------|--------|---|
| 19 | 119 | Flag 1 | i1 | QC flag for 'Latitude' and 'Longitude' |
| 20 | 120 | Flag 2 | i1 | QC flag for 'Ship speed (Ground)' |
| 21 | 121 | Flag 3 | i1 | QC flag for 'Course (Ground)' |
| 22 | 122 | Flag 4 | i1 | QC flag for 'Ship speed (Water)' |
| 23 | 123 | Flag 5 | i1 | QC flag for 'Gyro' |
| 24 | 124 | Flag 6 | i1 | QC flag for 'Air temperature' |
| 25 | 125 | Flag 7 | i1 | QC flag for 'Sea Surface Temperature (SST)' |
| 26 | 126 | Flag 8 | i1 | QC flag for 'Atmospheric pressure' |
| 27 | 127 | Flag 9 | i1 | QC flag for 'Relative humidity' |
| 28 | 128 | Flag 10 | i1 | QC flag for 'Wind direction' and 'Wind speed' |
| 29 | 129 | Flag 11 | i1 | QC flag for 'Depth' |
| 30 | 130 | Flag 12 | i1 | QC flag for 'Current direction' and 'Current speed' |

*1 The plus and minus sign of No.8 [Ship speed (Water)] about R/V KAIREI indicates the velocity of direction of a bow and stem.

*2 No.14 [True wind direction] and No.15 [True wind speed] about R/V SHINSEI MARU are instantaneous value.

* The terminator of each record is 'CR+LF' code.

* Missing value and format error value are filled with '9'.

Definition of Quality Control Flags

Flag 1 : Longitude and Latitude

- 1 - accepted
- 2 - questionable value
- 4 - failed in location check
- 9 - system error or input error

Flag 2 : Ship speed (ground)

- 1 - accepted
- 2 - questionable value
- 4 - failed range check (under 20 knots)
- 9 - system error or input error

Flag 3 : Course (ground)

- 1 - accepted
- 2 - questionable value
- 4 - failed range check (0 ~ 360 degree)
- 9 - system error or input error

Flag 4 : Ship speed (water)

- 1 - accepted
- 4 - failed range check (under 20 knots)
- 9 - system error or input error

9 - system error or input error

Flag 5 : Gyro

- 1 - accepted
- 4 - failed range check (0 ~ 360 degree)
- 9 - system error or input error

Flag 6 : Air temperature

- 3 - assumed good*
- 4 - failed range check (-20 ~ 40 degC)
- 9 - system error or input error

Flag 7 : Sea surface temperature

- 3 - assumed good*
- 4 - failed range check (-3 ~ 37 degC)
- 9 - system error or input error

Flag 8 : Atmospheric pressure

- 3 - assumed good*
- 4 - failed range check (890 ~ 1040 hPa)
- 9 - system error or input error

Flag 9 : Relative humidity

- 3 - assumed good*
- 4 - failed range check (0 ~ 100 %)
- 9 - system error or input error

Flag 10 : Wind direction and wind speed

- 3 - assumed good*
- 4 - failed range check (0 ~ 360 degree : wind direction, 0 ~ 60 m/s : wind speed)
- 9 - system error or input error

Flag 11 : Depth

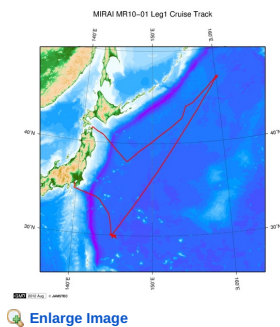
- 3 - assumed good*
- 4 - failed range check (4 ~ 11000 m)
- 9 - system error or input error

Flag 12 : Current direction and current speed

- 3 - assumed good*
- 4 - failed range check (0 ~ 360 degree : current direction, 0 ~ 5 knots : current speed)
- 9 - system error or input error

* 'assumed good' means that this data passed range check but may contains leap or inappropriate zero.

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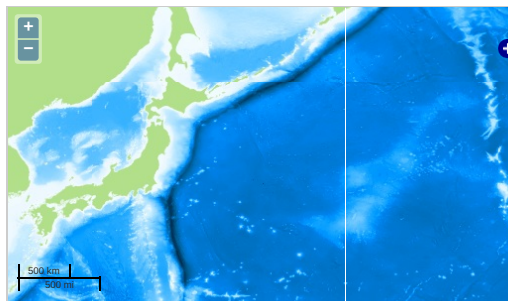
MIRAI MR10-01 Leg1 Navigation

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Observation Map

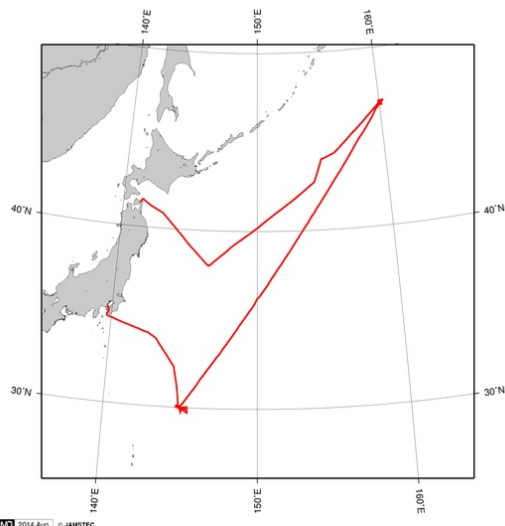


... Observation Line ... Navigation ... Observation, Dive Point, Hole

Imagery reproduced from ...

Figures

MR10-01 Leg1: Navigation



GMT 2014 Aug © JAMSTEC

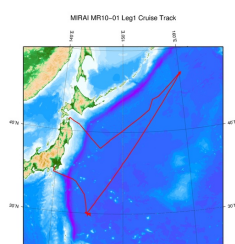
Data List

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File names

☐ MR10-01_leg1.dat

Related Information



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Go

Go to a Dive Information

Dive ID:



Go

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