

## MIRAI MR10-05 Leg1 Underway Thermosalinograph

Last Modified: 2017-06-29

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

Cruise ID: [MR10-05 Leg1](#)

Underway Thermosalinograph: Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Dissolved OXYGEN, Temperature, Salinity

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN  
OCEANS > SALINITY/DENSITY > SALINITY  
OCEANS > OCEAN > SEA SURFACE TEMPERATURE  
OCEANS TEMPERATURE TEMPERATURE

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR10-05\\_leg1-2\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR10-05_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:

Continuous sea surface water monitoring system (MR10-04 Leg1 - MR14-02 )



### Overview

Thermosalinograph measures the following surface parameters continuously.

- temperature
- salinity
- dissolved oxygen

Sea surface water is continuously pumped up at 4.5 meters depth to the sea surface monitoring laboratory and then flowed into each analysis equipment through a steel pipe and a vinyl-chloride pipe.

The flow rate of this system is controlled by some valves. Data are recorded in the personal computer.

### System

- Temperature sensor  
Model : SBE-38, Sea-Bird Electronics, Inc.  
Serial number : 3857820-0540  
Measurement range : -5 to 35 deg-C (ITS-90)  
Sensor location : Bow thruster room
- Salinity sensor  
MicroTSG (Thermosalinograph)  
Model : SBE-45, Sea-Bird Electronics, Inc.  
Serial number : 4557820-0319  
Measurement range : [temperature] -5 to +35 deg-C (ITS-90), [conductivity] 0 to 7 S/m  
Sensor location : Sea surface monitoring laboratory
- DO sensor  
Model : OPTODE 3835, AANDERAA Instruments.  
Serial number : 1233  
Measurement range : 0 to 500 umol dcum  
Sensor location : Sea surface monitoring laboratory

### Number of significant figures of data

After considering the accuracy of the sensors, the significant digit of data was changed as in the following list.

| Data             | Raw (ASCII data) | On this web site |
|------------------|------------------|------------------|
| Temperature      | 0.0001 [deg-C]   | 0.001 [deg-C]    |
| Salinity         | 0.0001 [PSU]     | 0.001 [PSU]      |
| Dissolved oxygen | 0.01 [umol/kg]   | 0.1 [umol/kg]    |

\* The unit of the dissolved oxygen was changed from ml/l into umol/kg since MR10-04.

### Data acquisition

| Date/Time (UTC)   | Start/Stop | Remarks               |
|-------------------|------------|-----------------------|
| 2010/08/25, 09:46 | start      | 40-23.71N, 142-15.60E |
| 2010/09/01, 16:27 | stop       | 54-00.64N, 166-27.86W |

### Calibration Information

Calibration Information is as follows.

#### Calibration Information

#### Data processing

##### (1) Quality control

QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure.

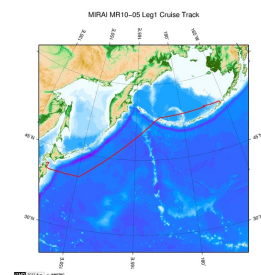
1) The gradient check of adjacent depth data

Please see the site of NODC of the following link for quality control procedure in detail.

[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

#### Related Information



[Enlarge Image](#)

#### MR10-05 Leg1

Ship Name: MIRAI

Period: 2010-08-24 - 2010-09-01

Chief Scientist: Motoyo Ito (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Arctic Climate Oceanography

Title:

#### Update History

|            |                                     |
|------------|-------------------------------------|
| 2017-06-29 | An observation data was registered. |
| 2015-06-04 | An observation data was registered. |
| 2014-04-03 | An observation data was registered. |
| 2014-03-12 | An observation data was registered. |
| 2013-05-03 | An observation data was registered. |

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

国立研究開発法人  
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### TSG DMO

#### Format Description for the QCed Data

Each data file contains one line header and daily observation data.

#### Header part

| No. | Column  | Content              | Format | Remarks           |
|-----|---------|----------------------|--------|-------------------|
| 1   | 1       | Header ID            | a1     | fixed as '#'      |
| 2   | 3 - 6   | Data ID              | a4     | TSG               |
| 3   | 8 - 22  | Cruise ID            | a15    | e.g. MRYX-XX_legx |
| 4   | 68 - 71 | Number of data lines | i4     |                   |
| 5   | 72 - 73 | Terminator           | -      | CR+LF             |

#### Data part

| No. | Column  | Content          | Unit    | Format        | Remarks   |
|-----|---------|------------------|---------|---------------|---|
| 1   | 1 - 8   | Date             | -       | i8            | YYYYMMDD (UTC)  |
| 2   | 10 - 13 | Time             | -       | i4            | hhmm (UTC)  |
| 3   | 15 - 23 | Latitude         | -       | i2,a1,f5.2,a1 | dd-mm.mmN(S)  |
| 4   | 25 - 34 | Longitude        | -       | i3,a1,f5.2,a1 | ddd-mm.mmE(W)   |
| 5   | 35 - 45 | Temperature      | deg-C   | f11.3         | ITS-90  |
| 6   | 46 - 56 | Salinity         | PSU     | f11.3         | PSS-78  |
| 7   | 57 - 67 | Dissolved oxygen | μmol/kg | f11.1         |   |
| 8   | 68 - 78 | Flag             | -       | i11           | 1 - 6 : space<br>7 : flag of date/time<br>8 : flag of latitude/longitude<br>9 : flag of temperature<br>10 : flag of salinity<br>11 : flag of dissolved oxygen |
| 9   | 79 - 80 | Terminator       | -       | -             | CR+LF   |

\* This format has been applied since MR10-04 cruise of R/V Mirai.

\* Temperature, Salinity, Dissolved oxygen: Missing value is presented by '-5', and error value is presented by '-9'.

#### Definition of Quality Control Flags

##### 1. Observed Level Flags

- 0 - accepted value
- 1 - range outlier ( outside of broad range check )
- A - doubtful value
- N - missing value

##### 2. Date and time flag (Thermosalinograph only)

- 0 - accepted data and time
- 1 - failed duplicate/missing/incorrect date and time

##### 3. Position flag (Thermosalinograph only)

- 0 - accepted position
- 1 - failed estimated ship speed check including missing/incorrect position

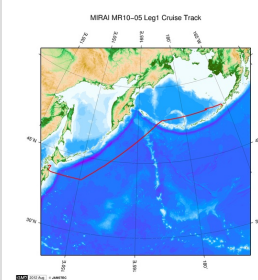
For details about range set of temperature, salinity and oxygen data, please refer the web site of NODC (National Oceanographic Data Center) from the following link for quality control procedure.

[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

#### Sample Program

[ex\\_read2.f](#)

### Related Information



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#### MR10-05 Leg1

Ship Name: MIRAI  
Period: 2010-08-24 - 2010-09-01  
Chief Scientist: Motoyo Ito (JAMSTEC)  
Project Name: [Arctic Ocean Climate System Research]  
Proposal ▶ Arctic Climate Oceanography  
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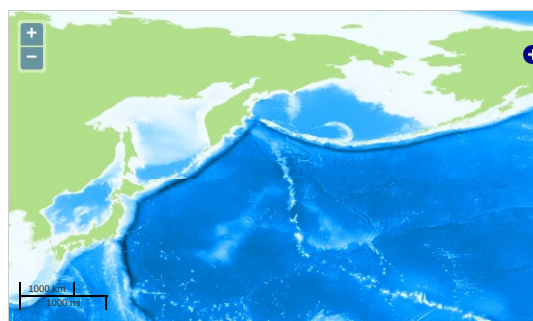
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> OCEAN > SEA SURFACE  
OCEANS TEMPERATURE TEMPERATURE

### Observation Map

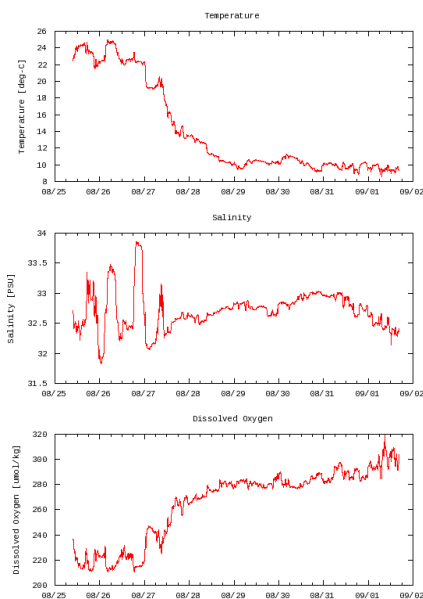


— ... Observation Line — ... Navigation — ... Observation, Dive Point, Hole

Imagery reproduced from ...

### Figures

MR10-05 Leg1: Underway Thermosalino Graph

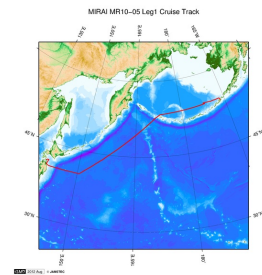


### Data List

[Add to Basket](#)

| <input type="checkbox"/> File names                  |
|--|
| <input type="checkbox"/> 20100825.dat                |
| <input type="checkbox"/> 20100826.dat                |
| <input type="checkbox"/> 20100827.dat                |
| <input type="checkbox"/> 20100828.dat                |
| <input type="checkbox"/> 20100829.dat                |
| <input type="checkbox"/> 20100830.dat                |
| <input type="checkbox"/> 20100831.dat                |
| <input type="checkbox"/> 20100901.dat                |
| <input type="checkbox"/> ex_read2.f (Sample Program) |

### Related Information



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Ship Name: MIRAI

Period: 2010-08-24 - 2010-09-01

Chief Scientist: Motoyo Ito (JAMSTEC)

Project Name: [Arctic Ocean Climate System Reaserch]

Proposal ▶ Arctic Climate Oceanography

Title:

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