

## MIRAI MR09-04 Underway Thermosalinograph

Last Modified: 2017-06-29

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[Observation  
Data](#)

[Data Format](#)

Cruise ID: [MR09-04](#)

Underway Thermosalinograph: Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved Oxygen

**Science Keywords:**

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

**Cruise Report**

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR09-04\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR09-04_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 ( - MR10-03 Leg2)



**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 3S, Sea-Bird Electronics, Inc.  
Serial number : 2607  
Measurement range : -5 to 35 deg-C (ITS-90)  
Sensor location : Bow thruster room
- Salinity sensor  
SEACAT THERMOSALINOGRAPH  
Model : Model : SBE-21, Sea-Bird Electronics, Inc.  
Serial number : 3126  
Measurement range : [temperature] -5 to +35 deg-C (ITS-90), [conductivity] 0 to 6.5 S/m  
Sensor location : Sea surface monitoring laboratory
- DO sensor  
Model : 2127A, Hach Ultra Analytics Japan Inc.  
Serial number : 61230  
Measurement range : 0 to 14 ppm  
Sensor location : Sea surface monitoring laboratory

**Data acquisition**

| Date/Time (UTC)   | Start/Stop | Remarks               |
|-------------------|------------|-----------------------|
| 2009-11-04, 00:30 | start      | 41-22.91N, 141-47.88E |
| 2009-12-10, 07:01 | stop       | 39-11.53N, 142-30.13E |

**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.

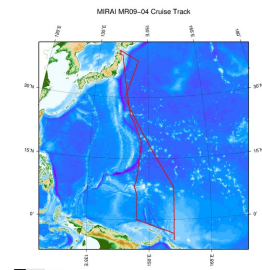
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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

**Note**

(1) In this cruise, there is extra data (fluorescence intensity) in addition to temperature, salinity, dissolved oxygen that has been opened to the public. Please contact us from "Contact Us" above if necessary.

**Related Information**



 [Enlarge Image](#)

#### MR09-04

Ship Name: MIRAI  
Period: 2009-11-03 - 2009-12-12  
Chief Scientist: Yuji Kashino (JAMSTEC)  
Project Name: [Tropical Ocean Climate Study (TOCS), Station KEO]  
Proposal ▶ Tropical Ocean Climate Study  
Title:

#### Update History

|            |                                    |
|------------|------------------------------------|
| 2017-06-29 | An observation data was registerd. |
| 2014-08-06 | An observation data was registerd. |
| 2014-03-12 | An observation data was registerd. |
| 2012-09-28 | An observation data was registerd. |

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Cruise ID:

#### Go to a Dive Information

Dive ID:

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**JAMSTEC**  
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

国立研究開発法人  
海洋研究開発機構

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Data Policy: [JAMSTEC](#)

### TSG DMO (MR98-K01 - MR10-03)

#### Format Description for the Corrected Data

Please see the site of each cruise.

#### Format Description for the QCed Data (MR98-K01 - MR10-03)

Each data file contains one line header (meta data) followed by data lines for one day.

The number of data lines are recorded in the header.

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    | MYYY-(K)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 | f11.4         | ITS-90   |
| 6   | 46 - 56 | Salinity         | PSU   | f11.4         | PSS-78   |
| 7   | 57 - 67 | Dissolved oxygen | mg/l  | f11.4         |  |
| 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<br>* reference : <a href="#">Definition of Quality Control Flags</a> |
| 9   | 79 - 80 | Terminator       | -     | -             | CR+LF  |

#### Definition of Quality Control Flags

##### 1. Depth Flags

- 0 - accepted value
- 1 - error in recorded depth ( same or less than previous depth )
- 2 - density inversion

##### 2. Observed Level Flags

- N - missing value
- 0 - accepted value
- 1 - range outlier ( outside of broad range check )
- 2 - failed inversion check
- 3 - failed gradient check
- 4 - zero anomaly
- 5 - failed combined gradient and inversion checks
- 6 - failed range and inversion checks
- 7 - failed range and gradient checks
- 8 - failed range and zero anomaly checks
- 9 - failed range and combined gradient and inversion checks
- A - failed visual check

\* The check only about range check for Thermosalinograph data.

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

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

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

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

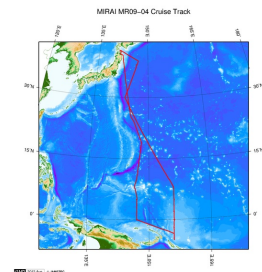
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read.f](#)

#### Related Information



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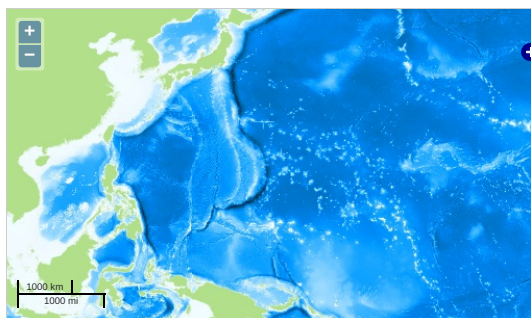
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OCEANS TEMPERATURE TEMPERATURE

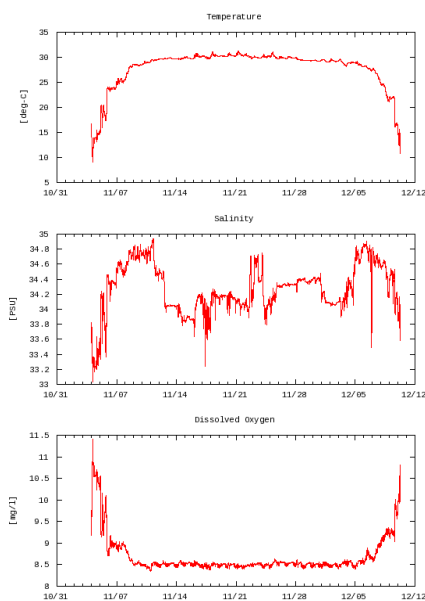
### Observation Map



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

### Figures

MR09-04: Underway Thermosalino Graph



### Data List

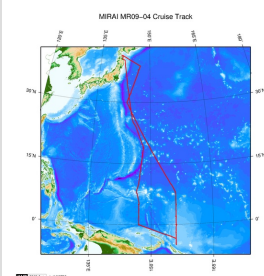
[Add to Basket](#)

☐ File names

|                          |              |
|--------------------------|--------------|
| <input type="checkbox"/> | 20091104.dat |
| <input type="checkbox"/> | 20091105.dat |
| <input type="checkbox"/> | 20091106.dat |
| <input type="checkbox"/> | 20091107.dat |
| <input type="checkbox"/> | 20091108.dat |
| <input type="checkbox"/> | 20091109.dat |
| <input type="checkbox"/> | 20091110.dat |
| <input type="checkbox"/> | 20091111.dat |
| <input type="checkbox"/> | 20091112.dat |
| <input type="checkbox"/> | 20091113.dat |
| <input type="checkbox"/> | 20091114.dat |
| <input type="checkbox"/> | 20091115.dat |
| <input type="checkbox"/> | 20091116.dat |
| <input type="checkbox"/> | 20091117.dat |
| <input type="checkbox"/> | 20091118.dat |
| <input type="checkbox"/> | 20091119.dat |

| File names  |
|---|
| <input type="checkbox"/> 20091120.dat               |
| <input type="checkbox"/> 20091121.dat               |
| <input type="checkbox"/> 20091122.dat               |
| <input type="checkbox"/> 20091123.dat               |
| <input type="checkbox"/> 20091124.dat               |
| <input type="checkbox"/> 20091125.dat               |
| <input type="checkbox"/> 20091126.dat               |
| <input type="checkbox"/> 20091127.dat               |
| <input type="checkbox"/> 20091128.dat               |
| <input type="checkbox"/> 20091129.dat               |
| <input type="checkbox"/> 20091130.dat               |
| <input type="checkbox"/> 20091201.dat               |
| <input type="checkbox"/> 20091202.dat               |
| <input type="checkbox"/> 20091203.dat               |
| <input type="checkbox"/> 20091204.dat               |
| <input type="checkbox"/> 20091205.dat               |
| <input type="checkbox"/> 20091206.dat               |
| <input type="checkbox"/> 20091207.dat               |
| <input type="checkbox"/> 20091208.dat               |
| <input type="checkbox"/> 20091209.dat               |
| <input type="checkbox"/> 20091210.dat               |
| <input type="checkbox"/> ex_read.f (Sample Program) |

#### Related Information



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