

MIRAI MR17-04 Leg2 Underway Thermosalinograph

Last Modified: 2018-03-30

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Cruise ID: [MR17-04 Leg2](#)

Underway Thermosalinograph: Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen

Science Keywords:

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

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR17-04_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 (MR14-03 -)



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 : 3852788-0457
 - Measurement range : -5 to 35 deg-C (ITS-90)
 - Sensor location : Bow thruster room
- Salinity sensor
 - Model : SBE-45, Sea-Bird Electronics, Inc.
 - Serial number : 4563325-0362
 - 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 : RINKO II, ARO-CAR/CAD
 - Serial number : 13
 - Measurement range : 0 to 20 mg L-1
 - 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 |
|-------------------|------------|-----------------------|
| 2017/08/05, 20:30 | start | 54-07.96N, 166-26.57W |
| 2017/08/07, 16:44 | stop | 54-27.62N, 166-00.05W |
| 2017/08/07, 17:53 | start | 54-27.91N, 165-59.58W |
| 2017/08/10, 09:56 | stop | 54-25.87N, 165-35.17W |
| 2017/08/10, 11:06 | start | 54-25.87N, 165-35.20W |
| 2017/08/16, 21:20 | stop | 54-12.56N, 168-37.95W |
| 2017/08/16, 22:11 | start | 54-12.78N, 168-38.86W |
| 2017/08/19, 17:39 | stop | 54-28.05N, 165-39.23W |

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](#)

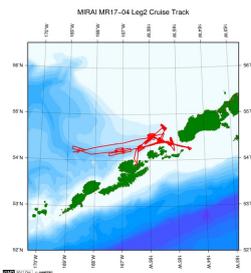
In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

Note

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

Related Information

[Cruise Data](#) [Dive Data](#)



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MR17-04 Leg2

Ship Name: MIRAI

Period: 2017-08-05 - 2017-08-21

Chief Scientist: Yoshihiro Fujiwara (JAMSTEC)

Proposal ▶ Collaborative experiment on Biogeochemical and Ecosystem Studies for sub-Arctic sea

Title:

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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 7 : flag of date/time 8 : flag of latitude/longitude 9 : flag of temperature 10 : flag of salinity 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.

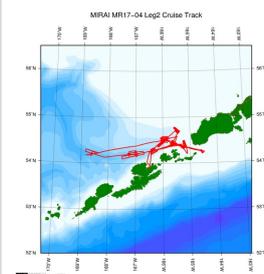
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read2.f](#)

Related Information

[Cruise Data](#) [Dive Data](#)



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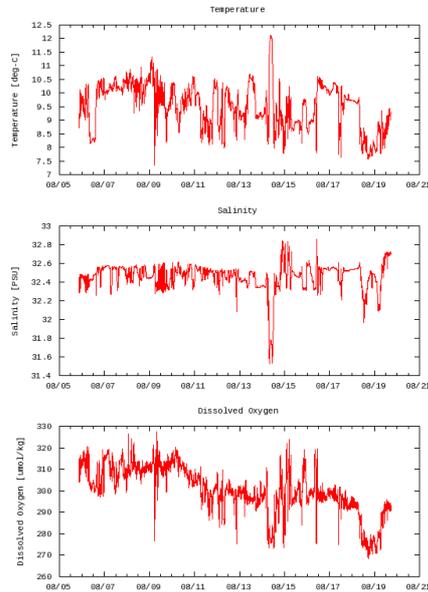
Observation Map



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

Figures

MR17-04 Leg2: Underway Thermosalino Graph



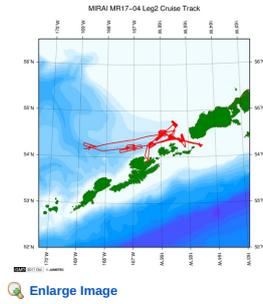
Data List

[Add to Basket](#)

| <input type="checkbox"/> | File names |
|--------------------------|-----------------------------|
| <input type="checkbox"/> | 20170805.dat |
| <input type="checkbox"/> | 20170806.dat |
| <input type="checkbox"/> | 20170807.dat |
| <input type="checkbox"/> | 20170808.dat |
| <input type="checkbox"/> | 20170809.dat |
| <input type="checkbox"/> | 20170810.dat |
| <input type="checkbox"/> | 20170811.dat |
| <input type="checkbox"/> | 20170812.dat |
| <input type="checkbox"/> | 20170813.dat |
| <input type="checkbox"/> | 20170814.dat |
| <input type="checkbox"/> | 20170815.dat |
| <input type="checkbox"/> | 20170816.dat |
| <input type="checkbox"/> | 20170817.dat |
| <input type="checkbox"/> | 20170818.dat |
| <input type="checkbox"/> | 20170819.dat |
| <input type="checkbox"/> | ex_read2.f (Sample Program) |

Related Information

Cruise Data Dive Data



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