

## MIRAI MR04-05 Underway Thermosalinograph

Last Modified: 2017-06-29

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

Cruise ID: [MR04-05](#)

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  
OCEANS TEMPERATURE TEMPERATURE

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR04-05\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR04-05_all.pdf)

### [For Using Data](#)

#### Principal Investigator

Data Management Office

#### Use Constraints

See [Terms and Conditions](#) about constrain of use.

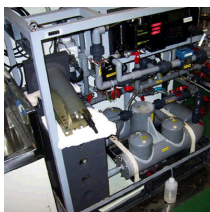
#### Data Citation

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 : 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 : 47477
  - Measurement range : 0 to 14 ppm
  - Sensor location : Sea surface monitoring laboratory

### Data acquisition

Date/Time (UTC)	Start/Stop	Remarks
2004/09/02, 02:53	start	55-30.27N, 167-55.31W
2004/09/03, 15:54	stop	64-50.06N, 168-27.78W
2004/09/03, 17:06	start	65-08.50N, 168-22.06W
2004/09/03, 18:07	stop	65-24.16N, 168-16.89W
2004/09/04, 02:47	start	65-53.24N, 168-16.89W
2004/10/08, 00:26	stop	69-05.05N, 166-21.41W
2004/10/08, 02:41	start	68-54.90N, 166-47.54W
2004/10/09, 16:27	stop	65-59.97N, 168-49.98W
2004/10/09, 23:11	start	65-34.89N, 168-36.23W
2004/10/09, 23:58	stop	65-23.84N, 168-38.53W

### 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.

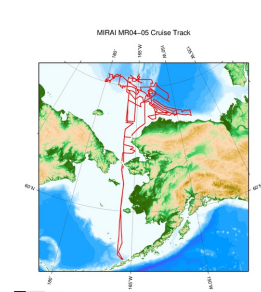
#### [QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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, particle size of plankton) 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](#)

#### MR04-05

Ship Name: MIRAI

Period: 2004-09-01 - 2004-10-13

Chief Scientist: Koji Shimada (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

#### Update History

2017-06-29	An observation data was registered.
2014-07-24	An observation data was registered.
2014-03-08	An observation data was registered.
2012-11-25	An observation data was registered.

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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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国立研究開発法人  
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Cruise ID: [MR04-05](#)

Underway Thermosalinograph: Processed (DMO)-QCed

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 7 : flag of date/time 8 : flag of latitude/longitude 9 : flag of temperature 10 : flag of salinity 11 : flag of dissolved oxygen * 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

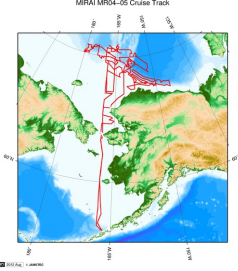
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read.f](#)

#### Related Information



MIRAI MR04-05 Cruise Track

 [Enlarge Image](#)

**MR04-05**  
Ship Name: MIRAI  
Period: 2004-09-01 - 2004-10-13  
Chief Scientist: Koji Shimada (JAMSTEC)  
Project Name: [Arctic Ocean Climate System Research]

Update History	
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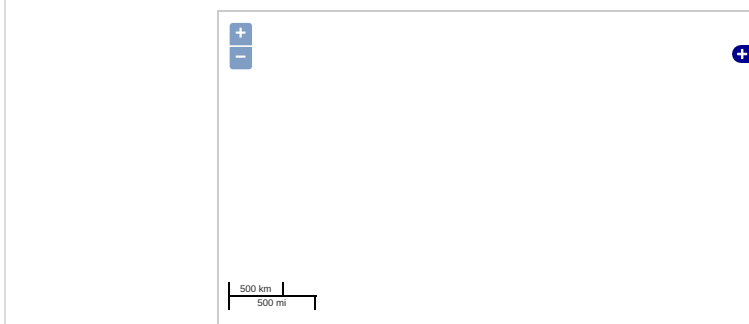
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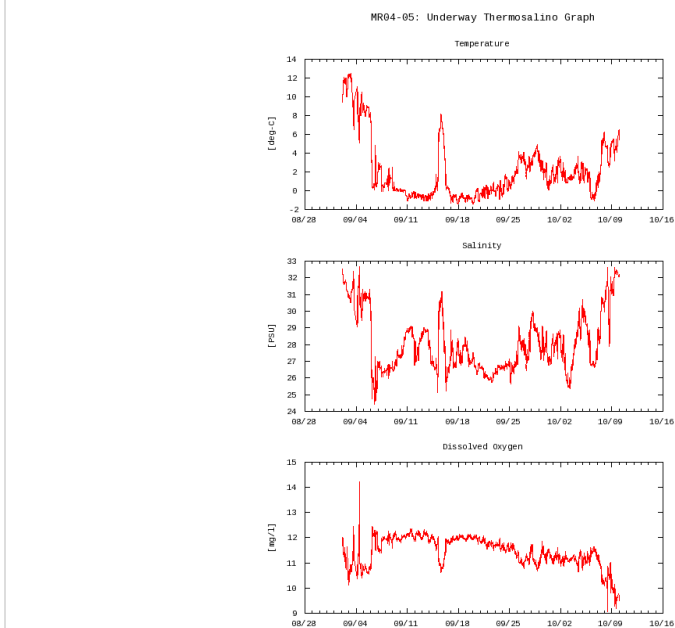
### Observation Map



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

Imagery reproduced from ...

### Figures



### Data List

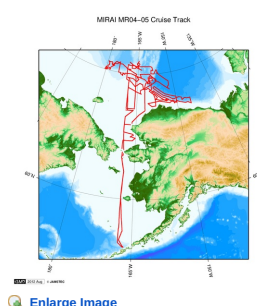
[Add to Basket](#)

☐ File names

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<input type="checkbox"/>	20040914.dat
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File names
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<input type="checkbox"/> 20041008.dat
<input type="checkbox"/> 20041009.dat
<input type="checkbox"/> ex_read.f (Sample Program)

#### Related Information



#### MR04-05

Ship Name: MIRAI

Period: 2004-09-01 - 2004-10-13

Chief Scientist: Koji Shimada (JAMSTEC)

Project Name: [Arctic Ocean Climate System Reaserch]

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