

## MIRAI MR09-03 Leg2 Underway Thermosalinograph

Last Modified: 2017-06-29

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Cruise ID: [MR09-03 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  
OCEANS > OCEAN > SEA SURFACE  
OCEANS TEMPERATURE TEMPERATURE

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR09-03\\_leg1-3\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR09-03_leg1-3_all.pdf)

### [For Using Data](#)

**Principal Investigator**

Data Management Office

**Use Constraints**

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

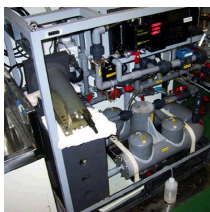
**Data Citation**

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
2009-09-07, 23:02	start	54-44.33N, 166-40.57W
2009-09-10, 02:24	stop	65-31.12N, 168-32.50W
2009-09-10, 04:46	start	65-53.15N, 168-29.12W
2009-09-20, 18:33	stop	78-57.88N, 151-36.01W
2009-09-21, 01:22	start	78-43.47N, 151-43.37W
2009-09-22, 00:55	stop	78-03.31N, 153-02.32W
2009-09-22, 01:27	start	78-00.03N, 153-20.43W
2009-10-05, 04:19	stop	74-38.28N, 171-09.29W
2009-10-05, 04:26	start	74-38.13N, 171-04.28W
2009-10-12, 08:44	stop	65-49.89N, 168-26.66W
2009-10-12, 11:15	start	65-29.90N, 168-31.32W
2009-10-15, 13:54	stop	54-15.41N, 166-32.78W

### 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.

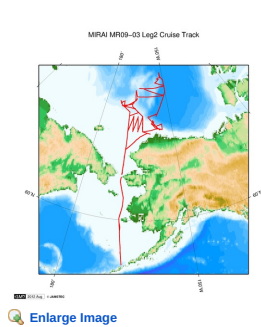
#### QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA

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



#### MR09-03 Leg2

Ship Name: MIRAI

Period: 2009-09-07 - 2009-10-15

Chief Scientist: Takashi Kikuchi (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Multi-disciplinary observation cruise for the Arctic Ocean

Title:

#### Update History

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

#### JAMSTEC

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NATSUSHIMA

KAIYO

YOKOSUKA

MIRAI

KAIREI

CHIKYU

KAIMEI

SHINSEI MARU

HAKUHO MARU

#### Information of the Submersibles

KAIKO

SHINKAI 2000

SHINKAI 6500

DEEP TOW

HYPER-DOLPHIN

URASHIMA

YOKOSUKA DEEP TOW

6K Camera DEEP TOW

6K Sonar DEEP TOW

KM-ROV

POWER GRAB

SAMPLER (SHELL)

POWER GRAB

SAMPLER (CLOW)

BMS

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Cruise ID:

#### Go to a Dive Information

Dive ID:

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**JAMSTEC**

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### 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

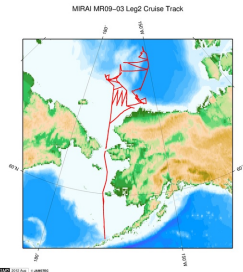
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read.f](#)

#### Related Information



 [Enlarge Image](#)

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Chief Scientist: Takashi Kikuchi (JAMSTEC)  
Project Name: [Arctic Ocean Climate System Research]  
Proposal ▶ Multi-disciplinary observation cruise for the Arctic Ocean  
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### Observation Map

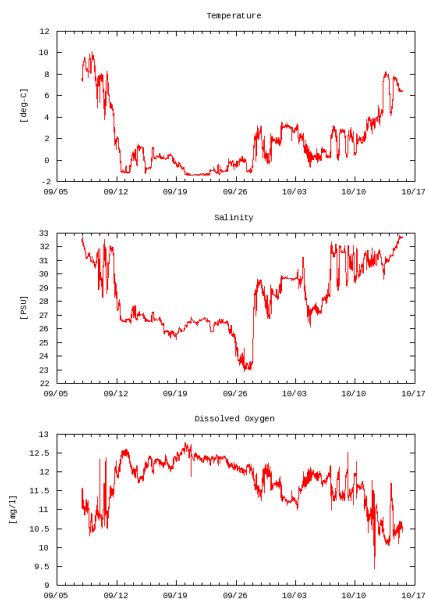


Imagery reproduced from ...

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

### Figures

MR09-03 Leg2: Underway Thermosalino Graph



### Data List

[Add to Basket](#)

☐ File names

☐ 20090907.dat

☐ 20090908.dat

☐ 20090909.dat

☐ 20090910.dat

☐ 20090911.dat

☐ 20090912.dat

☐ 20090913.dat

☐ 20090914.dat

☐ 20090915.dat

☐ 20090916.dat

☐ 20090917.dat

☐ 20090918.dat

☐ 20090919.dat

☐ 20090920.dat

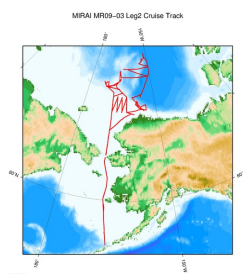
☐ 20090921.dat

☐ 20090922.dat

☐ 20090923.dat

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<input type="checkbox"/>	20091012.dat
<input type="checkbox"/>	20091013.dat
<input type="checkbox"/>	20091014.dat
<input type="checkbox"/>	20091015.dat
<input type="checkbox"/>	ex_read.f (Sample Program)

#### Related Information



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