

MIRAI MR17-04 Leg2 Underway Thermosalinograph

Last Modified: 2018-03-30

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

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
OCEANS > 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](#)

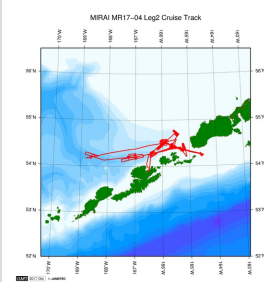
In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

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:

Update History

2018-03-30

An observation data was registered.

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HAKUHO MARU

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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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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.

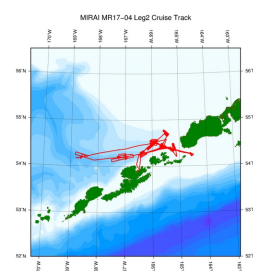
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read2.f](#)

Related Information

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



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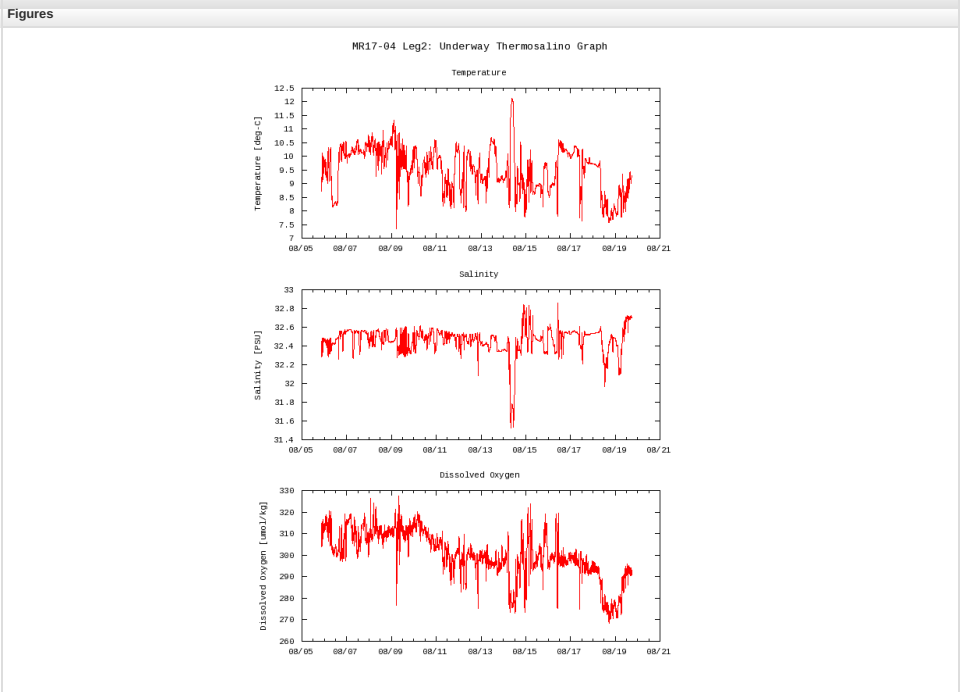
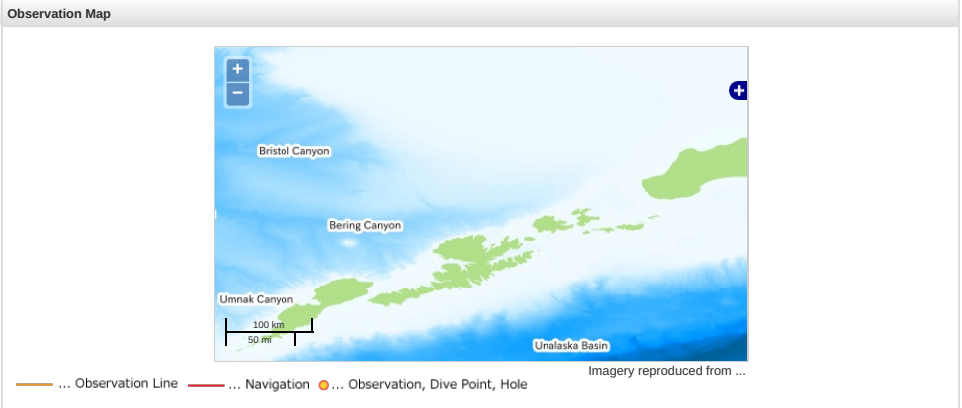
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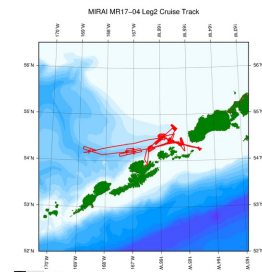
TEMPERATURE > TEMPERATURE



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)



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