

MIRAI MR17-04 Leg1 Underway Thermosalinograph

Last Modified: 2018-02-28

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Cruise ID: [MR17-04 Leg1](#)

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

Hiroshi Uchida (JAMSTEC)

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, JFE Advantech Co., Ltd.
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
2017/07/11, 09:51	start	40-25.64N, 142-07.79E
2017/07/15, 02:52	stop	46-59.96N, 160-01.88E
2017/07/15, 03:57	start	47-00.30N, 160-02.68E
2017/07/15, 11:30	stop	47-01.75N, 159-59.99E
2017/07/15, 12:37	start	47-01.06N, 159-59.64E
2017/07/15, 21:56	stop	47-00.62N, 160-02.02E
2017/07/15, 23:07	start	47-00.65N, 159-58.64E
2017/07/16, 12:19	stop	47-02.01N, 159-59.91E
2017/07/16, 13:52	start	47-01.23N, 159-59.81E

Date/Time (UTC)	Start/Stop	Remarks
		46-58.95N, 159-58.95E
2017/07/17, 07:26	start	47-01.20N, 160-01.04E
2017/07/17, 21:43	stop	47-00.16N, 160-00.46E
2017/07/17, 22:51	start	46-59.81N, 160-02.00E
2017/07/18, 11:03	stop	47-00.71N, 160-00.76E
2017/07/18, 12:11	start	46-59.65N, 159-59.61E
2017/07/20, 05:17	stop	47-00.05N, 160-00.00E
2017/07/20, 06:37	start	47-00.66N, 160-00.28E
2017/07/21, 22:47	stop	47-00.09N, 160-00.29E
2017/07/22, 00:05	start	47-00.88N, 159-59.82E
2017/07/22, 10:02	stop	47-00.08N, 160-00.27E
2017/07/22, 11:00	start	47-00.09N, 160-00.29E
2017/07/23, 07:24	stop	47-00.03N, 160-00.02E
2017/07/23, 08:57	start	47-00.06N, 159-59.99E
2017/07/24, 05:09	stop	46-59.76N, 159-59.75E
2017/07/24, 06:19	start	46-59.76N, 159-59.69E
2017/07/26, 03:42	stop	52-38.42N, 170-03.33E
2017/07/26, 04:42	start	52-38.42N, 170-03.46E
2017/07/28, 16:09	stop	56-29.87N, 175-29.95E
2017/07/28, 17:07	start	56-29.97N, 175-30.06E
2017/08/01, 16:57	stop	54-28.91N, 167-01.53W

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.

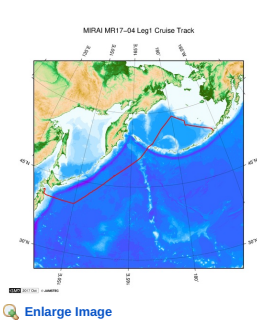
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (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



MR17-04 Leg1

Ship Name: MIRAI

Period: 2017-07-10 - 2017-08-02

Chief Scientist: Tetsuichi Fujiki (JAMSTEC)

Project Name: [Station K2]

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

Title:

Update History

2018-02-28 An observation data was registered.

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 HAKUHO MARU

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 SHINKAI 6500
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 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

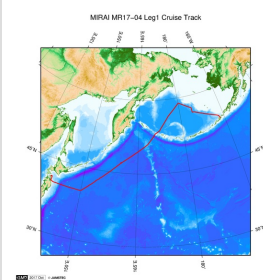
For details about range set of temperature, salinity and oxygen data, please refer the web site of NODC (National Oceanographic Data Center) from the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



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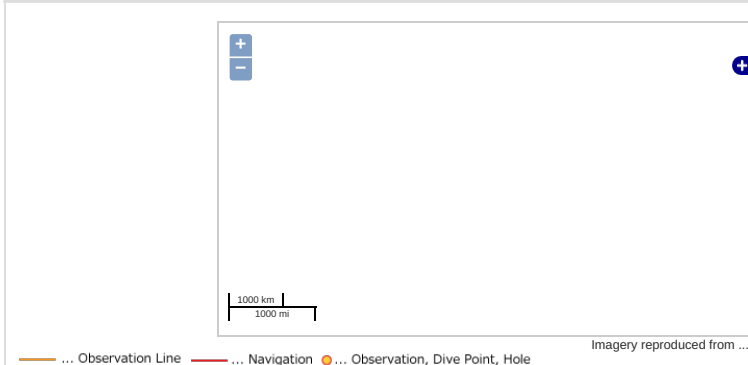
Data Policy: [JAMSTEC](#)

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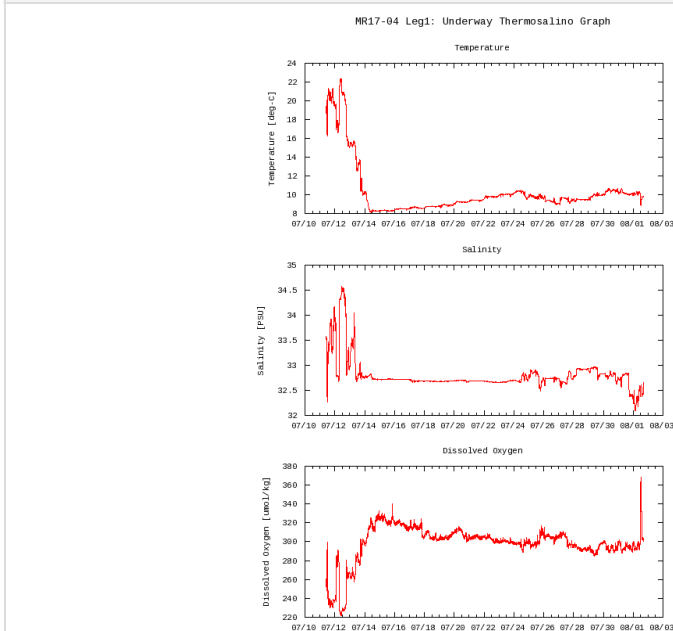
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OCEANS TEMPERATURE TEMPERATURE

Observation Map



Figures



Data List

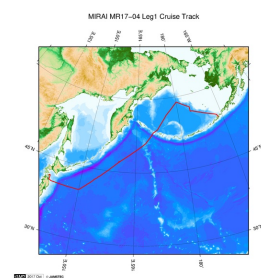
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☐ File names

<input type="checkbox"/> 20170711.dat
<input type="checkbox"/> 20170712.dat
<input type="checkbox"/> 20170713.dat
<input type="checkbox"/> 20170714.dat
<input type="checkbox"/> 20170715.dat
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<input type="checkbox"/> 20170717.dat
<input type="checkbox"/> 20170718.dat
<input type="checkbox"/> 20170719.dat
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<input type="checkbox"/> 20170721.dat
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<input type="checkbox"/> 20170724.dat
<input type="checkbox"/> 20170725.dat
<input type="checkbox"/> 20170726.dat
<input type="checkbox"/> 20170727.dat

File names
20170728.dat
20170729.dat
20170730.dat
20170731.dat
20170801.dat
ex_read2.f (Sample Program)

Related Information



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