

MIRAI MR02-K02 Underway Thermosalinograph

Last Modified: 2017-06-29

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

Cruise ID: [MR02-K02](#)

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
	TEMPERATURE	TEMPERATURE

For Using Data

Principal Investigator

Data Management Office

Use Constraints

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

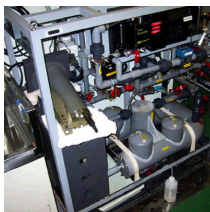
Data Citation

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, Orbisphere Laboratories Japan Inc.
 - Serial number : 44733
 - Measurement range : 0 to 14 ppm
 - Sensor location : Sea surface monitoring laboratory

Data acquisition

Date/Time (UTC)	Start/Stop	Remarks
2002/02/22, 12:55	start	39-21.24N, 142-35.25E
2002/02/24, 09:23	stop	29-02.44N, 147-23.15E
2002/02/24, 09:48	start	28-55.73N, 147-26.04E
2002/02/26, 00:46	stop	20-55.27N, 150-50.44E
2002/02/26, 00:50	start	20-54.28N, 150-50.86E
2002/03/22, 04:57	stop	09-28.91N, 145-47.63E
2002/03/25, 01:26	start	14-15.32N, 144-24.37E
2002/03/29, 06:02	stop	37-03.90N, 142-09.41E

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.

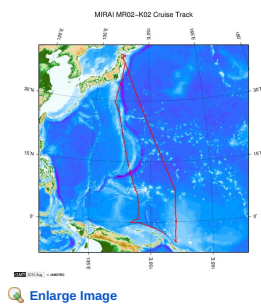
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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



MR02-K02

Ship Name: MIRAI

Period: 2002-02-21 - 2002-03-30

Chief Scientist: Kentaro Ando (JAMSTEC)

Project Name: [Tropical Ocean Climate Study (TOCS)]

Update History

2017-06-29	An observation data was registered.
2014-07-18	An observation data was registered.
2014-03-08	An observation data was registered.
2012-12-25	An observation data was registered.

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SHINSEI MARU
HAKUHO MARU

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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 (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	MRY-Y-(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 : Definition of Quality Control Flags
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

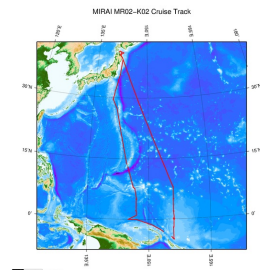
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read.f](#)

Related Information



[Enlarge Image](#)

MR02-K02

Ship Name: MIRAI
Period: 2002-02-21 - 2002-03-30
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

国立研究開発法人
海洋研究開発機構

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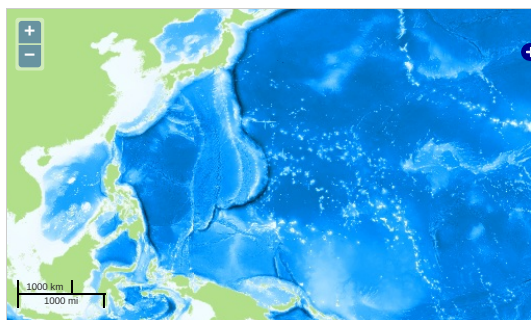
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Science Keywords:

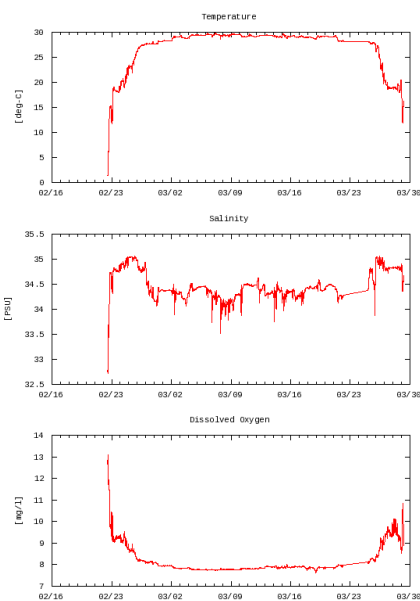
OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > SALINITY/DENSITY > SALINITY
OCEANS > OCEAN > SEA SURFACE
OCEANS TEMPERATURE TEMPERATURE

Observation Map



Figures

MR02-K02: Underway Thermosalino Graph



Data List

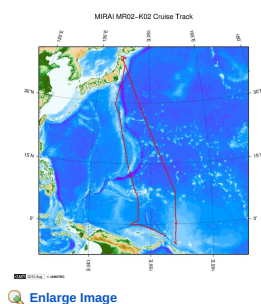
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☐ File names

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<input type="checkbox"/> 20020327.dat
<input type="checkbox"/> 20020328.dat
<input type="checkbox"/> 20020329.dat
<input type="checkbox"/> ex_read.f (Sample Program)

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