

MIRAI MR08-06 Leg1 Underway Thermosalinograph

Last Modified: 2017-06-29

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

Cruise ID: [MR08-06 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/MR08-06_leg1_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 : 2175
 - 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 : 2641
 - Measurement range : [temperature] -5 to +35 deg-C (ITS-90), [conductivity] 0 to 6.5 S/m
 - Sensor location : Sea surface monitoring laboratory
- Salinity sensor (*)
 - Model : SBE4, Sea-Bird
 - Serial number : 043063
 - Measurement range : 0.0 to 7 S/m
 - Accuracy : 0.0003 S/m
 - Resolution : 0.00004 S/m
- DO sensor
 - Model : 2127A, Hach Ultra Analytics Japan Inc.
 - Serial number : 61230
 - Measurement range : 0 to 14 ppm
 - Sensor location : Sea surface monitoring laboratory

Special notes

There was something wrong with salinity sensor SBE-21 on February 7.

Therefore, salinity data was acquired using the CTD 9plus system (*) from then on.

In this system, experiment sea water was circulated in bath (about 15L) placed into the sink of a surface sea water laboratory.

Data acquisition

Date/Time (UTC)	Start/Stop	Remarks
2009/01/16, 12:00	start	40-10.98N, 142-39.64E
2009/02/02, 21:13	stop	14-33.36S, 151-10.01W
2009/02/07, 11:57	start	19-24.13S, 147-58.97W
2009/02/08, 10:00	stop	20-57.45S, 146-26.57W
2009/02/08, 10:05	start	20-57.46S, 146-26.58W

Date/Time (UTC)	Start/Stop	Remarks
2009/02/09, 07:55	start	19-26.48S, 145-40.44W
2009/02/09, 07:56	stop	19-11.34S, 145-29.42W
2009/02/09, 08:15	start	19-11.14S, 145-29.27W
2009/02/10, 21:10	start	19-07.19S, 145-26.41W
2009/02/10, 22:12	stop	18-50.48S, 142-25.56W
2009/02/12, 00:59	start	18-39.62S, 142-20.60W
2009/02/12, 02:04	stop	20-37.95S, 143-34.77W
2009/02/12, 06:54	start	20-49.88S, 143-45.07W
2009/02/12, 07:56	stop	20-57.24S, 143-45.21W
2009/02/12, 17:52	start	20-57.88S, 143-45.61W
2009/02/12, 18:09	stop	21-59.11S, 144-42.56W
2009/02/12, 18:12	start	21-55.91S, 144-39.62W
2009/02/12, 18:23	stop	21-55.86S, 144-38.97W
2009/02/12, 18:23	start	21-57.45S, 144-36.61W
2009/02/12, 18:33	stop	21-58.83S, 144-34.43W
2009/02/12, 18:56	start	22-02.28S, 144-30.09W
2009/02/14, 06:35	stop	27-41.04S, 139-44.34W
2009/02/14, 07:30	start	27-51.67S, 139-33.83W
2009/02/20, 06:22	stop	48-14.91S, 118-30.04W
2009/02/20, 07:44	start	48-14.93S, 118-05.49W
2009/02/21, 01:08	stop	48-15.01S, 118-11.17W
2009/02/21, 01:52	start	48-15.03S, 118-15.79W
2009/02/21, 23:59	stop	48-10.22S, 112-00.21W
2009/02/22, 00:26	start	48-10.30S, 111-51.44W
2009/02/28, 08:00	stop	43-37.01S, 073-50.78W
2009/02/28, 09:30	start	43-31.16S, 073-36.91W
2009/03/07, 20:56	stop	46-33.15S, 075-57.16W
2009/03/07, 21:53	start	46-36.26S, 075-51.18W
2009/03/12, 13:09	stop	33-03.72S, 073-22.04W

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.

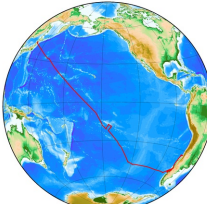
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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



MR08-06 Leg1 Cruise Track

MR08-06 Leg1
Ship Name: MIRAI
Period: 2009-01-14 - 2009-03-13
Chief Scientist: Natsue Abe (JAMSTEC)
Project Name: [South Pacific Ocean Research Activity 2009]

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Update History

2017-06-29	An observation data was registered.
2014-08-05	An observation data was registered.
2014-03-12	An observation data was registered.
2012-10-27	An observation data was registered.

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YOKOSUKA DEEP TOW
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6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER (SHELL)
POWER GRAB SAMPLER (CLOW)
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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 : 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.

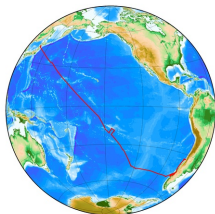
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read.f](#)

Related Information

MIRAI MR08-06 Leg1 Cruise Track



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MR08-06 Leg1

Ship Name: MIRAI

Period: 2009-01-14 - 2009-03-13

Chief Scientist: Natsue Abe (JAMSTEC)

Project Name: [South Pacific Ocean Research Activity 2009]

Update History

2017-06-29	An observation data was registerd.
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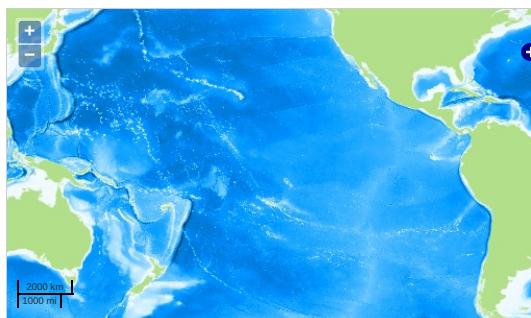
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OCEANS TEMPERATURE TEMPERATURE

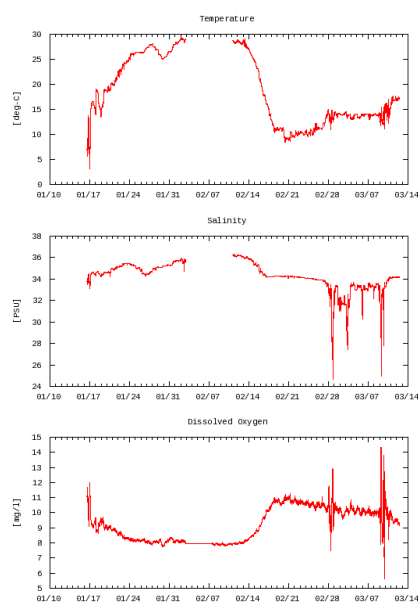
Observation Map



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

Figures

MR08-06 Leg1: Underway Thermosalino Graph



Data List

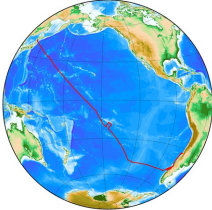
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☐ File names

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<input type="checkbox"/>	20090310.dat
<input type="checkbox"/>	20090311.dat
<input type="checkbox"/>	20090312.dat
<input type="checkbox"/>	ex_read.f (Sample Program)

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