

## MIRAI MR00-ENG Underway Thermosalinograph

Last Modified: 2018-01-31

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

Cruise ID: [MR00-ENG](#)

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

**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 03S, Sea-Bird Electronics, Inc.  
Serial number : 032607  
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 : 2113117-2088  
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 : 2127A, Orbisphere Laboratories Japan Inc.  
Serial number : 31757  
Measurement range : 0 to 14 ppm  
Sensor location : Sea surface monitoring laboratory

**Data acquisition**

Date/Time (UTC)	Start/Stop	Remarks
2000/04/28, 20:18	start	32-50.92N, 132-19.93E
2000/04/28, 23:59	stop	32-12.46N, 133-15.58E
2000/04/29, 00:01	start	32-12.08N, 133-16.13E
2000/04/29, 15:07	stop	31-35.76N, 135-02.91E
2000/04/29, 15:34	start	31-39.49N, 135-10.66E
2000/04/29, 18:54	stop	32-10.17N, 136-06.58E
2000/04/29, 19:15	start	32-13.33N, 136-12.34E
2000/04/30, 09:00	stop	34-27.23N, 139-31.55E

**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.

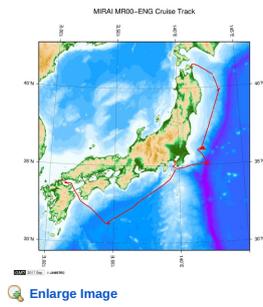
1) The gradient check of adjacent depth data

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.

**Related Information**



**MR00-ENG**  
 Ship Name: MIRAI  
 Period: 2000-04-27 - 2000-05-05

**Update History**

2018-01-31 An observation data was registerd.

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**Information of the Ships**

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- [KAIYO](#)
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**Information of the Submersibles**

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- [SHINKAI 6500](#)
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- [YOKOSUKA DEEP TOW](#)
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- [POWER GRAB SAMPLER \(SHELL\)](#)
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**Go to a Cruise Information**

Cruise ID:

**Go to a Dive Information**

Dive ID:

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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-(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

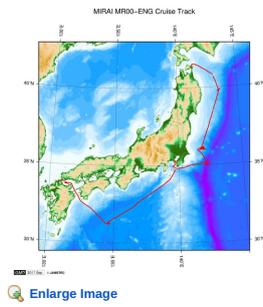
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read.f](#)

#### Related Information



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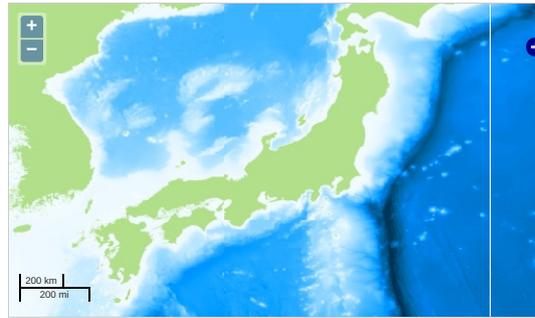
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Science Keywords:

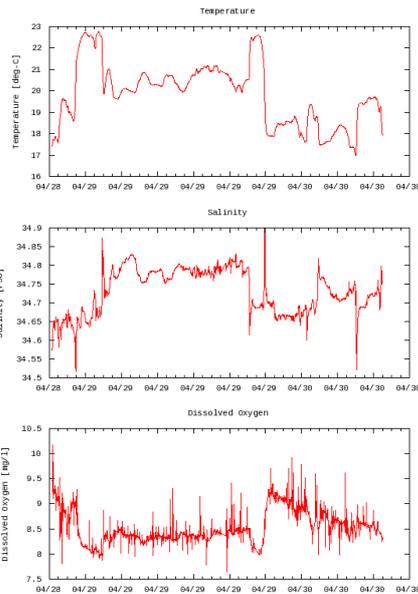
OCEANS > OCEAN CHEMISTRY > OXYGEN  
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 OCEANS TEMPERATURE TEMPERATURE

### Observation Map



### Figures

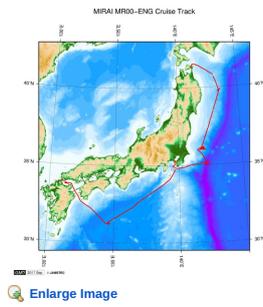
MR00-ENG: Underway Thermosalino Graph



### Data List

- File names
- 20000428.dat
- 20000429.dat
- 20000430.dat
- ex\_read.f (Sample Program)

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