

## MIRAI MR13-04 Underway Thermosalinograph

Last Modified: 2015-06-30

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

Cruise ID: **MR13-04**

Underway Thermosalinograph: Processed (PI)

Data Policy: **JAMSTEC**

Observation Items: Temperature, Salinity, Dissolved oxygen, Fluorescence, Chlorophyll

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN  
OCEANS > OCEAN CHEMISTRY > SALINITY  
OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL  
OCEANS > SALINITY/DENSITY > SALINITY  
OCEANS > OCEAN > SEA SURFACE  
OCEANS TEMPERATURE TEMPERATURE  
OCEANS > OCEAN OPTICS > FLUORESCENCE

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR13-04\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR13-04_all.pdf)

### For Using Data

#### Principal Investigator

Masahide Wakita (JAMSTEC)

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 (MR10-04 Leg1 - MR14-02 )



### Data processing

- Missing of the position data (latitude and longitude) was linearly interpolated.
- Data whose difference from the median of 3 data points was more than the threshold (0.1 degrees C for temperature and 0.5 for salinity) was replaced by the median.
- Median filter with a window of 3 data points was applied to the fluorometer data.
- Hamming filter with a window of 15 data points was applied to the RINKO and fluorometer data.
- Salinity data were corrected by using sampled salinity data as follows.  
Corrected Salinity =  $c0 + c1 \cdot S + c2 \cdot \text{day}$   
where S is uncorrected salinity, day is days from the first data point.  
 $c0 = 3.051034678024978e-02$   
 $c1 = 0.9983405010023095$   
 $c2 = 5.647383690957231e-04$
- Dissolved oxygen data were corrected by using sampled dissolved oxygen data as follows.  
Corrected Oxygen =  $d0 + d1 \cdot O + d2 \cdot T + d3 \cdot \text{day}$   
where O is uncorrected dissolved oxygen, day is days from the first data point and T is temperature.  
 $d0 = 2.324944924216037$   
 $d1 = 0.9325070105011479$   
 $d2 = 0.2142508354263566$   
 $d3 = -3.013319538773928e-02$
- Chlorophyll-a was estimated from the fluorometer data by using sampled chlorophyll-a data as follows.  
Estimated chlorophyll-a =  $e0 + e1 \cdot FI$   
where FI is fluorescence.  
 $e0 = 7.100395024942785e-02$   
 $e1 = 7.345979323004842e-02$

### Related Information

#### MR13-04

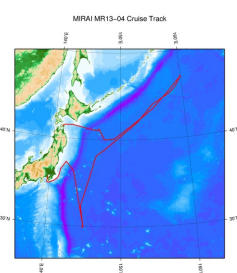
Ship Name: MIRAI

Period: 2013-07-09 - 2013-07-29

Chief Scientist: Makio Honda (JAMSTEC)

Project Name: [Station K2, Station S1, Station KEO, Station KNOT]

Proposal [►](#) Change in material cycles and ecosystem by the climate change and its feedback Title:



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Update History	
2015-06-30	An observation data was registerd.
2014-03-12	An observation data was registerd.
2014-02-11	An observation data was registerd.
2014-02-07	An observation data was registerd.

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6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB  
SAMPLER (SHELL)  
POWER GRAB  
SAMPLER (CLOW)  
BMS

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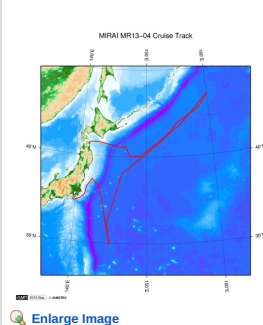
### DATA Format

Column No.	Column Heading Mnemonic	Units Mnemonic	Reporting Precision FORTTRAN Format	Comments
1	EXPCODE		A12	Expedition code
2	DATE		I8	Date (YYYYMMDD)
3	TIME	UTC	I4	Time (HHMM)
4	LATITUDE	DEG	F10.5	Latitude
5	LONGITUDE	DEG	F10.5	Longitude
6	SPEED	KNOT	F6.1	Ship speed
7	FLOW	L/MIN	F6.1	Flow rate
8	INTAKE-TEMPERATURE	ITS-90	F9.4	Temperature of bottom of the ship (SBE 38)
9	INTAKE-TEMPERATURE_FLAG		I1	see flag definition below
10	TSG-TEMPERATURE	ITS-90	F9.4	Thermosalinograph temperature (SBE 45)
11	TSG-TEMPERATURE_FLAG		I1	see flag definition below
12	TSG-SALINITY	PSS-78	F9.4	Thermosalinograph salinity (SBE 45)
13	TSG-SALINITY_FLAG		I1	see flag definition below
14	SALINITY	PSS-78	F9.4	Sampled salinity
15	SALINITY_FLAG		I1	see flag definition below
16	TSG-OXYGEN	UMOL/KG	F9.2	Oxygen sensor RINKO-II
17	TSG-OXYGEN_FLAG		I1	see flag definition below
18	OXYGEN	UMOL/KG	F9.2	Sampled oxygen
19	OXYGEN_FLAG		I1	see flag definition below
20	FLUORESCENCE	RFU	F9.2	Fluorometer C3 (primary)
21	FLUORESCENCE_FLAG		I1	see flag definition below
22	TSG-CHLOROPHYLL-A	MG/CUM	F9.3	Chlorophyll-a estimated from the fluorometer
23	TSG-CHLOROPHYLL-A_FLAG		I1	see flag definition below
24	CHLOROPHYLL-A	MG/CUM	F9.2	Sampled chlorophyll-a
25	CHLOROPHYLL-A_FLAG		I1	see flag definition below

### Flag definition

- 1: not corrected
- 2: corrected for the sensor data or acceptable for the sampled data
- 3: questionable measurement
- 4: bad measurement
- 6: interpolated
- 8: low-pass filtered
- 9: missing data (missing value is -999)

### Related Information



#### MR13-04

Ship Name: MIRAI  
Period: 2013-07-09 - 2013-07-29  
Chief Scientist: Makio Honda (JAMSTEC)  
Project Name: [Station K2, Station S1, Station KEO, Station KNOT]  
Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback  
Title:

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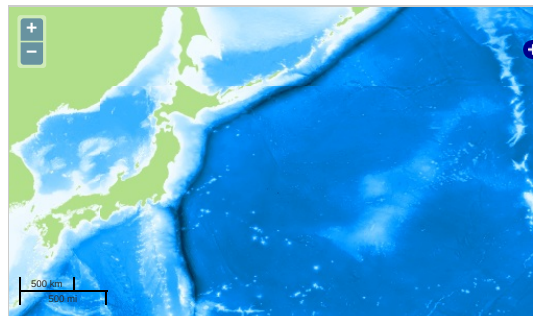
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### Observation Map



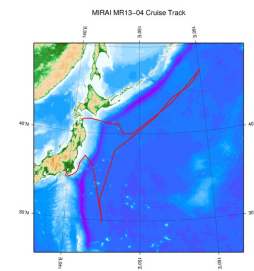
Imagery reproduced from ...

### Data List

File names

☐ 49NZ20130709\_tsg.csv

### Related Information



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