

MIRAI MR13-06 Leg1 Underway Thermosalinograph

Last Modified: 2015-06-30

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Cruise ID: [MR13-06 Leg1](#)

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/MR13-06_leg1-2_all.pdf

For Using Data

Principal Investigator

Shigeto Nishino (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

1. Missing of the position data (latitude and longitude) was linearly interpolated.
2. 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.
3. Median filter with a window of 3 data points was applied to the fluorometer data.
4. Hamming filter with a window of 15 data points was applied to the RINKO and fluorometer data.
5. Salinity and oxygen data were corrected by using sampled data as follows.

Corrected Salinity = $c0 + c1 \cdot S + c2 \cdot \text{day}$

Corrected Oxygen = $d0 + d1 \cdot O + d2 \cdot T + d3 \cdot \text{day}$

where S is uncorrected salinity, O is uncorrected dissolved oxygen, day is days from the first data point and T is temperature.

$c0 = -2.218852110167374e-05$

$c1 = 1.000000743992938$

$c2 = 1.640447579659283e-07$

$d0 = -3.907105265717067e-03$

$d1 = 1.000010222747963$

$d2 = 1.636945033157210e-04$

$d3 = -1.893198797950931e-05$

6. Chlorophyll-a was estimated from the fluorometer data by using sampled data as follows.

Estimated chlorophyll-a = $e0 + e1 \cdot FI$ (for latitude ≤ 60 degrees N)

= $e0 + e2 \cdot FI$ (for latitude ≥ 61 degrees N)

= $f1 \cdot (e0 + e1 \cdot FI) + f2 \cdot (e0 + e2 \cdot FI)$ (for $60 \text{ degrees N} < \text{latitude} < 61 \text{ degrees N}$)

where FI is fluorescence.

$e0 = -0.1840612815216757$

$e1 = 9.175157969077005e-02$

$e2 = 0.2013011478381347$

$f1 = 1 - (\text{latitude} - 60)$

$f2 = 1 - f1$

Note

Nishino, S., 2013, R/V Mirai Cruise Report MR13-06, edited by S. Nishino, 226pp., JAMSTEC, Yokosuka, Japan.

Upon consultation in advance with the chief of investigation and the person(s) in charge of research issues who gathered that data, we request that the text of the results material contain a statement to the effect that it was obtained during the R/V Mirai cruise of MR13-06, the Chief Scientist, Shigeto Nishino (JAMSTEC), and the following Principal Investigators (PIs) for gathering the data.

Chief Scientist

Shigeto Nishino

Japan Agency for Marine - Earth Science and Technology (JAMSTEC)

2-15 Natsushima, Yokosuka, Kanagawa 237-0061, Japan

Tel: +81-46-867-9487, Fax: +81-46-867-9437

E-mail: nishinos @ jamstec.go.jp

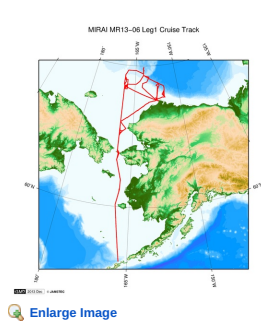
PIs for TSG

Shigeto Nishino (JAMSTEC)

Hiroshi Uchida (JAMSTEC)

And also the data were jointly obtained by the JAMSTEC and the GRENE (Green Network of Excellence) Arctic Climate Change Research Project of the Ministry of Education, Culture, Sports, Science and Technology in Japan (MEXT).

Related Information



 [Enlarge Image](#)

MR13-06 Leg1

Ship Name: MIRAI

Period: 2013-08-28 - 2013-10-07

Chief Scientist: Shigeto Nishino (JAMSTEC)

Project Name: [Arctic Ocean Climate System Reaserch]

Proposal ▶ Study on environmental changes in the sea-ice reduction regions of the Arctic Ocean

Title:

Update History

2015-06-30	An observation data was registerd.
2014-10-08	An observation data was registerd.
2014-05-20	An observation data was registerd.

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Information of the Submersibles

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[SHINKAI 6500](#)
[DEEP TOW](#)
[HYPER-DOLPHIN](#)
[URASHIMA](#)
[YOKOSUKA DEEP TOW](#)
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[KM-ROV](#)
[POWER GRAB SAMPLER \(SHELL\)](#)
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Go to a Cruise Information

Cruise ID:

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Dive ID:

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JAMSTEC 国立研究開発法人
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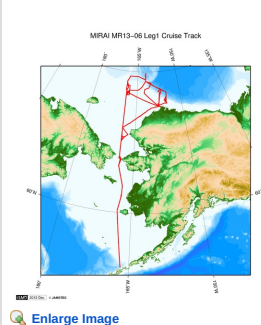
DATA Format

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



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OCEANS TEMPERATURE TEMPERATURE
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Observation Map



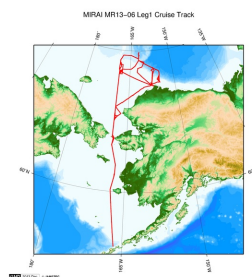
— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Data List

File names

☐ 49NZ20130828_tsg.csv

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