

## MIRAI MR18-05C Underway Thermosalinograph

Last Modified: 2019-06-11

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

Cruise ID: [MR18-05C](#)

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/MR18-05C\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR18-05C_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 (MR14-03 - )



### 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.

### System

- Temperature  
Model : SBE38, Sea-Bird Electronics, Inc.  
S/N : 3852788-0457  
Measurement range : -5 to 35 deg-C (ITS-90)  
Sensor location : Bow thruster room
- Salinity  
Model : SBE45, Sea-Bird Electronics, Inc.  
S/N : 4563325-0362  
Measurement range : [temperature] -5 to +35 deg-C (ITS-90), [conductivity] 0 to 7 S/m  
Sensor location : Sea surface monitoring laboratory
- Dissolved oxygen  
Model : RINKO II, JFE Advantech Co., Ltd.  
S/N : 13  
Measurement range : 0 - 200%
- Sensor location : Sea surface monitoring laboratory
- Fluorescence and Turbidity  
Model : C3, Turner Designs  
S/N : 2300384  
Measurement range : [Chlorophyll *in vivo*] 0 to 500  $\mu\text{g L}^{-1}$ , [Turbidity] 0 to 1500 NTU
- Total dissolved gas pressure  
Model : HGTD-Pro, model 0-30 PSI, Pro-Oceanus Systems Inc.  
S/N : 37-394-10

### Number of significant figures of data

After considering the accuracy of the sensors, the significant digit of data was changed as in the following list.

Data	Raw (ASCII data)	On this web site
Temperature	0.0001 [deg-C]	0.001 [deg-C]
Salinity	0.0001 [PSU]	0.001 [PSU]
Dissolved oxygen	0.01 [ $\mu\text{mol/kg}$ ]	0.1 [ $\mu\text{mol/kg}$ ]

\* The unit of the dissolved oxygen was changed from ml/l into  $\mu\text{mol/kg}$  since MR10-04.

### Data missing period

2018/11/02 08:19		
2018/11/02 08:27		
2018/11/02 08:32		
2018/11/02 08:35	-	2018/11/02 08:38
2018/11/13 10:49	-	2018/11/13 10:59

#### Calibration Information

Calibration Information is as follows.

##### [Calibration Information](#)

#### Data processing

DMO-QCed data are flagged after the data check process shown below:

##### 1) Range check

For details about range set of temperature, salinity and oxygen data, please refer the web site of NODC (National Oceanographic Data Center) from the following link for quality control procedure.

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

##### 2) Visual check

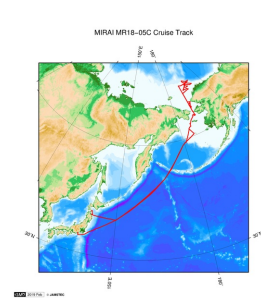
If an value were extremely out from time-series plot of each variable or were affected by ambient air due to unstable flow of sampled water, it may be put flag "A" which means doubtful value.

#### About this data

This cruise obtained data of fluorescence, turbidity, and total dissolved gas pressure in addition to data of temperature, salinity and dissolved oxygen. Please

[contact us](#) for usage of those data.

#### Related Information



[Enlarge Image](#)

##### [MR18-05C](#)

Ship Name: MIRAI

Period: 2018-10-24 - 2018-12-06

Chief Scientist: Jun Inoue (National Institute of Polar Research)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement

Title:

#### Update History

2019-06-11	An observation data was registered.
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Cruise ID:

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Dive ID:

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### TSG DMO

#### Format Description for the QCed Data

Each data file contains one line header and daily observation data.

#### 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	e.g. MRYX-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	f11.3	ITS-90
6	46 - 56	Salinity	PSU	f11.3	PSS-78
7	57 - 67	Dissolved oxygen	μmol/kg	f11.1	
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
9	79 - 80	Terminator	-	-	CR+LF

\* This format has been applied since MR10-04 cruise of R/V Mirai.

\* Temperature, Salinity, Dissolved oxygen: Missing value is presented by '-5', and error value is presented by '-9'.

#### Definition of Quality Control Flags

##### 1. Observed Level Flags

- 0 - accepted value
- 1 - range outlier ( outside of broad range check )
- A - doubtful value
- N - missing value

##### 2. Date and time flag (Thermosalinograph only)

- 0 - accepted data and time
- 1 - failed duplicate/missing/incorrect date and time

##### 3. Position flag (Thermosalinograph only)

- 0 - accepted position
- 1 - failed estimated ship speed check including missing/incorrect position

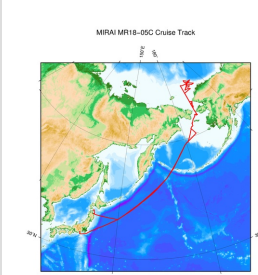
For details about range set of temperature, salinity and oxygen data, please refer the web site of NODC (National Oceanographic Data Center) from the following link for quality control procedure.

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

#### Sample Program

[ex\\_read2.f](#)

### Related Information



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#### MR18-05C

Ship Name: MIRAI  
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Chief Scientist: Jun Inoue (National Institute of Polar Research)  
Project Name: [Arctic Ocean Climate System Reaserch]  
Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement  
Title:

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2019-06-11 An observation data was registerd.

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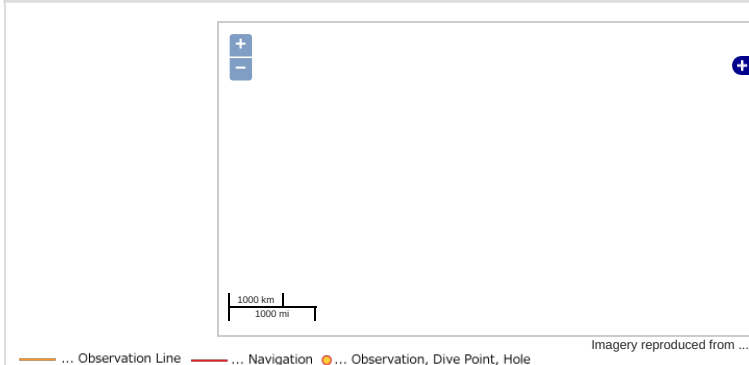
Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen

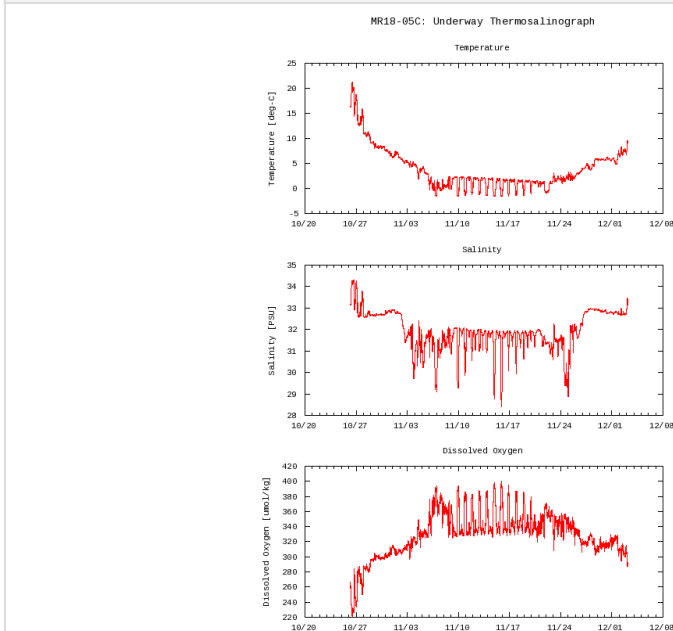
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OCEANS TEMPERATURE TEMPERATURE

### Observation Map



### Figures



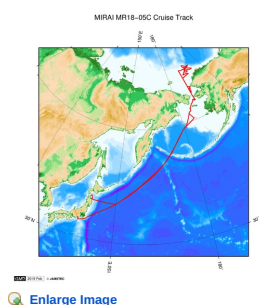
### Data List

[Add to Basket](#)

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<input type="checkbox"/> 20181026.dat
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<input type="checkbox"/> 20181029.dat
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<input type="checkbox"/> 20181101.dat
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<input type="checkbox"/> 20181107.dat
<input type="checkbox"/> 20181108.dat
<input type="checkbox"/> 20181109.dat
<input type="checkbox"/> 20181110.dat
<input type="checkbox"/> 20181111.dat

File names
20181112.dat
20181113.dat
20181114.dat
20181115.dat
20181116.dat
20181117.dat
20181118.dat
20181119.dat
20181120.dat
20181121.dat
20181122.dat
20181123.dat
20181124.dat
20181125.dat
20181126.dat
20181127.dat
20181128.dat
20181129.dat
20181130.dat
20181201.dat
20181202.dat
20181203.dat
ex_read2.f (Sample Program)

#### Related Information



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