

## SHINSEI MARU KS-21-20 Underway Thermosalinograph

Last Modified: 2022-03-08

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

Cruise ID: [KS-21-20](#)

Underway Thermosalinograph: Processed (DMO)-QCed

Data Policy: [JURCAOS-JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN  
OCEANS > SALINITY/DENSITY > SALINITY  
OCEANS > OCEAN TEMPERATURE > SEA SURFACE TEMPERATURE

Cruise Report

[https://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/KS-21-20\\_all.pdf](https://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/KS-21-20_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



### Overview

Thermosalinograph measures the following surface parameters continuously.

- temperature
- salinity
- dissolved oxygen

Sea surface water is continuously pumped up at 2.9 meters depth to the No.2 Laboratory and then flowed into each analyzer.

The flow rate of this system is controlled.

### System

- Temperature  
Model: Pt100 N66M, Nippon Electric Instrument  
S/N : TS14831  
Measurement range : M (0-220 deg-C)  
Accuracy :  $\pm 0.15$  deg-C (JIS Grade A)  
Sensor location : ship bottom (mean draft: 4.5m)
- Salinity  
Model : RINKO-AAQ170, JFE Advantech Co., Ltd.  
S/N : 130  
Measurement range : [Temperature] -3 to 45°C, [Conductivity] 0.5 to 70 mS/cm, [Salinity] 2 to 42 PSU  
Accuracy : [Temperature]  $\pm 0.01^\circ\text{C}$ , [Conductivity]  $\pm 0.01$  mS/cm, [Salinity] -  
Resolution : [Temperature] 0.001°C, [Conductivity] 0.001 mS/cm, [Salinity] 0.001 PSU  
Sensor location : No.2 Laboratory
- Dissolved Oxygen  
Model : RINKO-AAQ170, JFE Advantech Co., Ltd.  
S/N : 130  
Measurement range : 0 to 200% (0 to 20 mg/L)  
Accuracy :  $\pm 2\%$  FS ( $\pm 0.4$  mg/L)  
Resolution : 0.01% (0.001mg/L)  
Sensor location : No.2 Laboratory
- Fluorescence and Turbidity  
Model : RINKO-AAQ170, JFE Advantech Co., Ltd.  
S/N : 130  
Measurement range : [Chlorophyll] 0~400ppb (Uranin reference), [Turbidity] 0~1000FTU  
Accuracy : [Chlorophyll] Non-linearity  $\pm 1\%$  FS (0~200ppb), [Turbidity]  $\pm 0.3$  FTU or  $\pm 2\%$   
Resolution : [Chlorophyll] 0.01 ppb, [Turbidity] 0.03 FTU  
Sensor location : No.2 Laboratory

### 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.

Zero padding was applied to the temperature data published on this site.

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

## Data processing

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

### 1) Data processing

The raw data was recorded every 30 seconds intervals.

The data published on this site was created as 1 minute data by extracting the raw data whose time within  $\pm 15$  seconds is closer to 00 second.

### 2) Dissolved oxygen data unit was converted from saturation to concentration ( $\mu\text{mol/kg}$ ).

### 3) 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](#)

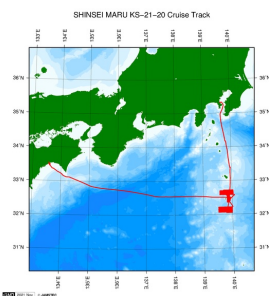
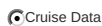
### 4) Visual check

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 and turbidity in addition to data of temperature, salinity and dissolved oxygen. Please [contact us](#) for usage of those data.

## Related Information



[Enlarge Image](#)

### KS-21-20

Ship Name: SHINSEI MARU

Period: 2021-08-30 - 2021-09-08

Chief Scientist: Tatsuo Nozaki (JAMSTEC)

Proposal Unraveling abnormal gold enrichment mechanism at the Higashi-Aogashima Knoll Caldera

Title: hydrothermal filed

## Update History

2022-03-08

An observation data was registerd.

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Cruise ID:

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Dive ID:

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国立研究開発法人  
海洋研究開発機構  
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

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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.

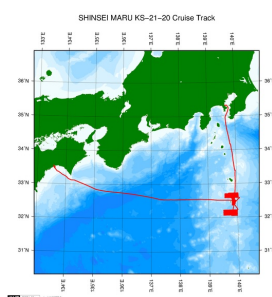
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

#### Sample Program

[ex\\_read2.f](#)

### Related Information

☒ Cruise Data ☐ Dive Data



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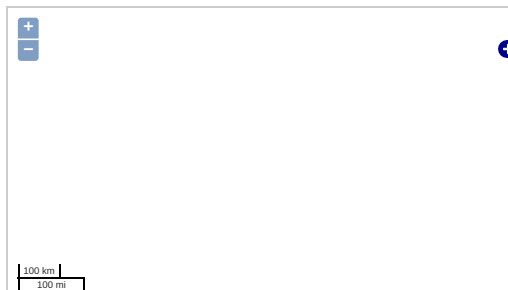
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> OCEAN > SEA SURFACE  
OCEANS TEMPERATURE TEMPERATURE

### Observation Map

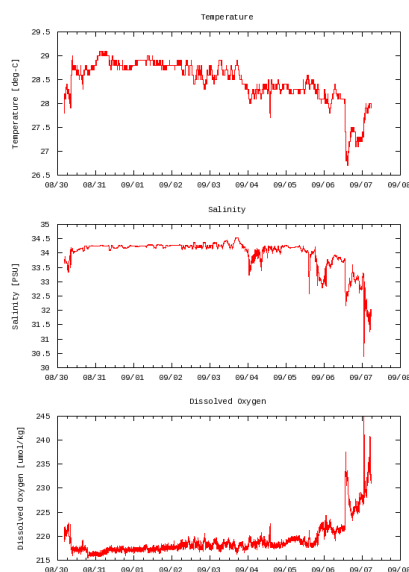


— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Imagery reproduced from ...

### Figures

KS-21-20: Underway Thermosalinograph

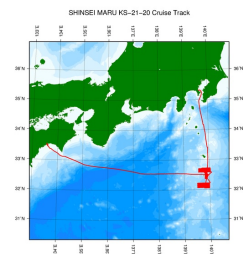


### Data List

☐ File names  
☐ 20210830.dat  
☐ 20210831.dat  
☐ 20210901.dat  
☐ 20210902.dat  
☐ 20210903.dat  
☐ 20210904.dat  
☐ 20210905.dat  
☐ 20210906.dat  
☐ 20210907.dat  
☐ ex\_read2.f (Sample Program)

### Related Information

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