

SHINSEI MARU KS-21-3 Underway Thermosalinograph

Last Modified: 2021-10-12

ReadMe Observation Data Data Format

Cruise ID: **KS-21-3**

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
> OCEAN > SEA SURFACE
OCEANS TEMPERATURE TEMPERATURE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/KS-21-3_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 : ± 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] ± 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 (± 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] ± 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 ± 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

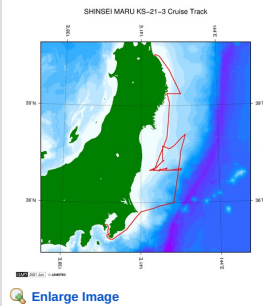
4) Visual check

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



KS-21-3

Ship Name: SHINSEI MARU

Period: 2021-03-23 - 2021-03-30

Chief Scientist: Sachihiko Itoh (The University of Tokyo)

Proposal Structure, material exchange and production processes of submesoscale phenomena in the off

Title: Tohoku frontal areas during a mixing period

[Enlarge Image](#)

Update History

2021-10-12 An observation data was registerd.

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CHIKYU
KAIMEI
SHINSEI MARU
HAKUHO MARU

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SHINKAI 6500
DEEP TOW
HYPER-DOLPHIN
URASHIMA
YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB
SAMPLER (SHELL)
POWER GRAB
SAMPLER (CLOW)
BMS

Go to a Cruise Information

Cruise ID:

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Dive ID:

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海洋研究開発機構

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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

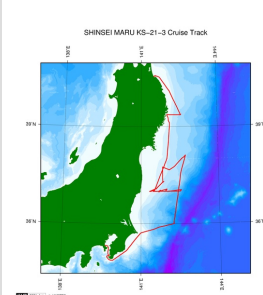
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[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read2.f](#)

Related Information



[Enlarge Image](#)

KS-21-3

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Period: 2021-03-23 - 2021-03-30
Chief Scientist: Sachiniko Itoh (The University of Tokyo)
Proposal Title: Structure, material exchange and production processes of submesoscale phenomena in the off Tohoku frontal areas during a mixing period

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KAIYO
YOKOSUKA
MIRAI
KAIREI
CHIKYU
KAIMEI
SHINSEI MARU
HAKUHO MARU

SHINKAI 2000
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POWER GRAB
SAMPLER (SHELL)
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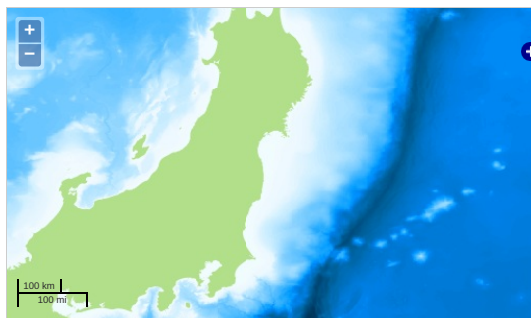
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Observation Map

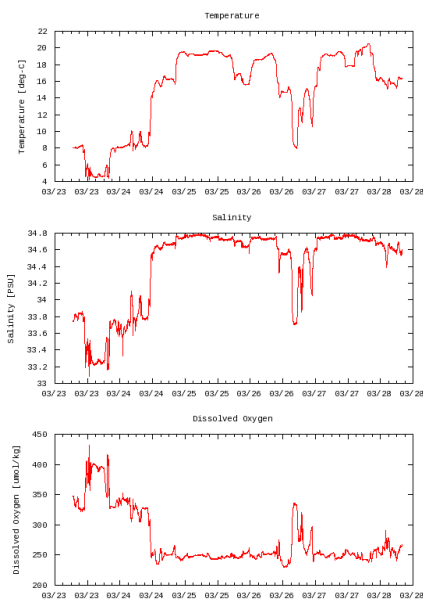


Imagery reproduced from ...

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

Figures

KS-21-3: Underway Thermosalinograph



Data List

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☐ File names
☐ 20210323.dat
☐ 20210324.dat
☐ 20210325.dat
☐ 20210326.dat
☐ 20210327.dat
☐ 20210328.dat
☐ ex_read2.f (Sample Program)

Related Information

SHINSEI MARU KS-21-3 Cruise Track



 [Enlarge Image](#)

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