

For Using Data

Data Policy	JAMSTEC
Principal Investigator	Data Management Office
Use Constraints	See Terms and Conditions about constrain of use.
Data Citation	See Terms and Conditions about data citation.

Quality level

DMO-Processed

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 3.1 meters depth to the sea surface monitoring laboratory, then flowed to each analyzer.

The flow rate of this system is controlled.

Measurement System

1) Temperature

Manufacturer :	Sea-Bird Scientific
Type :	SBE38
Serial No.	38-0970
Calibration date :	2022/08/19
Measurement range :	-5 ~ 35 deg-C (ITS-90)
Accuracy :	+/-0.001 deg-C
Resolution :	0.00025 deg-C
Location :	Bow thruster room

2) Salinity (temperature/conductivity)

Manufacturer :	Sea-Bird Scientific
Type :	SBE45
Serial No.	45-0568
Calibration date :	2022/08/19
Measurement range :	[temperature] -5 ~ 35 deg-C (ITS-90)
	[conductivity] 0 ~ 7 S/m
Accuracy :	[temperature] +/- 0.002 deg-C
	[conductivity] +/- 0.0003 S/m
Resolution :	[temperature] 0.0001deg-C
	[conductivity] 0.00001 S/m
Location :	Sea surface monitoring laboratory

3) Dissolved oxygen

Manufacturer :	JFE Advantech Co., Ltd.
Type :	RINKO II ARO-CAR
Serial No.	0040
Calibration date :	2021/03/10
Measurement range :	0 ~ 200%

Accuracy :	+/- 2% F.S. (non-linear)	
Resolution :	0.001mgL ⁻¹ to 0.004mg L ⁻¹	
Location :	Sea surface monitoring laboratory	
4) Fluorescence and Turbidity		
Manufacturer :	Turner Designs	
Type :	C3	
Serial No.	2300558	
Calibration date :	2021/03/15	
Measurement range :	[chlorophyll in vivo]	0 ~ 500 $\mu\text{g L}^{-1}$
	[turbidity]]	0 ~ 1500 NTU
Minimum Detection Limit :	[chlorophyll in vivo]	0.03 $\mu\text{g L}^{-1}$
	[turbidity]]	0.05NTU
Location :	Sea surface monitoring 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.

Item	Raw data	On this data
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 [$\mu\text{mol/kg}$]

Data processing

DMO-Processed 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 see the following reference of NODC (National Oceanographic Data Center) .

Quality control and processing of historical oceanographic temperature, salinity, and oxygen data. P. Boyer and Levitus, 1994. NOAA technical report NESDIS ; 81

* <https://repository.library.noaa.gov/view/noaa/13443>

2) Visual check

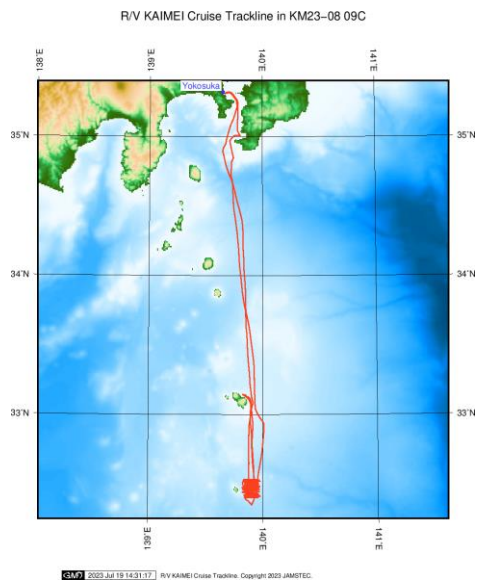
If an value were extremely out from time-series plot of each variable or were affected by ambient air due to unstable flow of sampled water, it may be put flag "A" which means doubtful value.

About this data

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

If you would like these data set, please contact DMO at "dmo@jamstec.go.jp".

Related Information



KM23-08_09C

Ship Name: KAIMEI
Period: 2023/06/26 - 2023/07/07
Chief Scientist: Tatsuo Nozaki (JAMSTEC)
Proposal: Geophysical survey for the future BMS drilling at the Higashi-Aogashima Knoll Caldera hydrothermal field: Part 2

Unraveling the abnormal gold enrichment mechanism at the Higashi-Aogashima Knoll Caldera hydrothermal field: ROV dive survey part 3

Format Description for TSG DMO

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	a2	[CR][LF]

Data part

No.	Column	Content	Format	Unit	Remarks
1	1 - 8	Date	i4,i2,i2		YYYYMMDD (UTC)
2	10 - 13	Time	i2,i2		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	f11.3	deg-C	ITS-90
6	46 - 56	Salinity	f11.3	PSU	PSS-78
7	57 - 67	Dissolved oxygen	f11.1	μ mol/kg	
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	a2		[CR][LF]

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

Definition of Quality Control Flags

- Observed Level Flags
 - 0 - accepted value
 - 1 - range outlier (outside of broad range check)
 - A - doubtful value
 - N - missing value
- Date and time flag (Thermosalinograph only)
 - 0 - accepted data and time
 - 1 - failed duplicate/missing/incorrect date and time
- Position flag (Thermosalinograph only)
 - 0 - accepted position
 - 1 - failed estimated ship speed check including missing/incorrect position