

MIRAI MR18-05C Bottle Sampling Water Chemical Analysis

Last Modified: 2021-01-15

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

Bottle Sampling Water Chemical Analysis : Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items: Pressure, Temperature, Practical salinity, Dissolved oxygen, Potential temperature, Density, Transmittance, Fluorescence, Turbidity, Chlorophyll

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN CHEMISTRY > SALINITY
OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY
OCEANS > OCEAN CHEMISTRY > SUSPENDED SOLIDS
OCEANS > OCEAN OPTICS > FLUORESCENCE
OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR18-05C_all.pdf

For Using Data

Principal Investigator

CTD/O₂ : Jun Inoue (National Institute of Polar Research)
XMISS, FLUOR, TURB : Jun Inoue (National Institute of Polar Research)
SALNTY : Jun Inoue (National Institute of Polar Research)
OXYGEN : Akihiko Murata (JAMSTEC)
CHLWEL : Akihiko Murata (JAMSTEC)

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

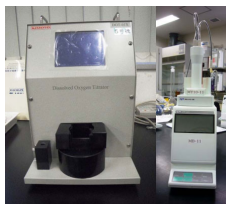
Instrument:

Salinity measurement system



Instrument:

Titration for DO Dissolved oxygen titration equipment (MR11-06 -)



Instrument:

Fluorometer (TURNER DESIGNS)



Information on CTD data

Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.
Measurement range : 0 to 10500 m
Accuracy : ± 0.015% of full scale range
Resolution : 0.001% of full scale

Temperature sensor

Model : SBE03, Sea-Bird Electronics, Inc.
Measurement range : -5 to +35 °C
Accuracy : ± 0.001 °C
Resolution : 0.0002 °C

Salinity sensor

Model : SBE04C, Sea-Bird Electronics, Inc.
Measurement range : 0 to 7 S/m
Accuracy : ± 0.0003 S/m
Resolution : 0.00004 S/m

DO sensor (primary)

Model : RINKO III, JFE Advantech Co. Ltd.
Measurement range : 0 to 200 %
Accuracy : ± 2% FS, non linearity
Resolution : 0.01 to 0.04 %

DO sensor (secondary)

Model : SBE43, Sea-Bird Electronics, Inc.
Measurement range : 120% of surface saturation
Accuracy : ± 2% of saturation

Transmissometer

Model : C-Star, WET Labs, Inc.
Linearity : 99% R²

Fluorometer

Model : Seapoint Chlorophyll Fluorometer, Seapoint Sensors, Inc.
Measurement range : 0 - 5 µg/l
Resolution : 0.02 µg/l

Turbidity

Model : Seapoint Turbidity Meter, Seapoint Sensors, Inc.

Measurement range : 0 to 25 FTU
Resolution : 0.006 FTU

Information on Chemical and Biological data

Salinity

Instruments : Autosol salinometer model 8400B (Guildline Instruments Ltd.)
Methods : -
Precision : average of absolute difference 0.0003, standard deviation of absolute difference 0.0003 (12 pairs of replicate samples)
Reference Material/Calibration : IAPSO Standard Sea Water P161 (Ocean Scientific International Ltd.)

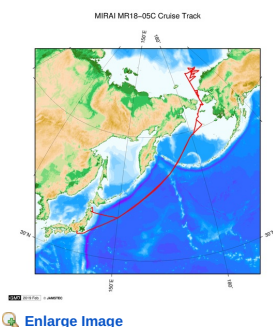
Dissolved Oxygen

Instruments : Burette: APB-510/APB-610/APB-620 manufactured by Kyoto Electronic Co. Ltd. /10 cm³ of titration vessel
Detector and Software: Automatic photometric titrator DOT-15X manufactured by Kimoto Electronic Co. Ltd
Methods : Winkler method/photometric methods
Precision : -
Reference Material/Calibration : the standard potassium iodate (NMIJ CRM 3006-a No.061)

Chlorophyll a

Instruments : Fluorophotometer model 10-AU-005 (Turner design)
Methods : Extract in N, N-dimethylformamide /fluorometric determination (Welschmeyer non-acidification method)
Precision : -
Reference Material/Calibration : Chlorophyll a from Anacystis nidulans algae(Sigma Aldrich)

Related Information



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

2021-01-15 An observation data was registered.

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6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER (SHELL)
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Bottle Sampling Water Chemical Analysis: Processed (PI)

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Exchange Format

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office).

Please see the following link for details of Exchange Format.

[CCHDO | CLIVAR & Carbon Hydrographic Data Office](#)

Format Information

Column No.	Column Heading Mnemonic	Units Mnemonic	Reporting Precision FORTRAN Format	Comments
1	EXPCODE		A14	ExpoCode
2	SECT_ID		A6	Section ID
3	STNNBR		A6	Station Number
4	TYPE		A4	Type
5	CASTNO		I3	Cast Number
6	SAMPNO		A7	Sample Number
7	BTLNBR		A7	Bottle Number (S/N fixed to the sampling device)
8	BTLNBR_FLAG_W		I1	Bottle quality flags
9	DATE		I8	Cast date
10	TIME	UTC	A4	Cast time
11	LATITUDE	DEG	F8.4	Latitude
12	LONGITUDE	DEG	F9.4	Longitude
13	DEPTH	METERS	I5	Bottom depth
14	CTDDPT	METERS	F9.1	Depth
15	CTDDPT_FLAG_W		I1	Quality flags for CTD data
16	CTDPRS	DBAR	F9.1	Pressure
17	CTDPRS_FLAG_W		I1	Quality flags for CTD data
18	CTDTMP	ITS-90	F9.4	Temperature (primary sensor)
19	CTDTMP_FLAG_W		I1	Quality flags for CTD data
20	CTDTMP_1	ITS-90	F9.4	Temperature (secondary sensor)
21	CTDTMP_1_FLAG_W		I1	Quality flags for CTD data
22	CTDSAL	PSS-78	F9.4	Salinity (primary sensor)
23	CTDSAL_FLAG_W		I1	Quality flags for CTD data
24	CTDSAL_1	PSS-78	F9.4	Salinity (secondary sensor)
25	CTDSAL_1_FLAG_W		I1	Quality flags for CTD data
26	CTDCND	S/M	F11.6	Conductivity (primary sensor)
27	CTDCND_FLAG_W		I1	Quality flags for CTD data
28	CTDCND_1	S/M	F11.6	Conductivity (secondary sensor)
29	CTDCND_1_FLAG_W		I1	Quality flags for CTD data
30	CTDOXY	UMOL/KG	F9.2	CTD-oxygen (primary sensor)
31	CTDOXY_FLAG_W		I1	Quality flags for CTD data
32	CTDOXY_1	UMOL/KG	F9.2	CTD-oxygen (secondary sensor)
33	CTDOXY_1_FLAG_W		I1	Quality flags for CTD data
34	CTDOXY_s	UMOL/KG	F9.2	CTD-oxygen (primary sensor using secondary T and S)
35	CTDOXY_s_FLAG_W		I1	Quality flags for CTD data
36	CTDOXV	V	F9.4	CTD-oxygen voltage (primary sensor)
37	CTDOXV_FLAG_W		I1	Quality flags for CTD data
38	CTDOXV_1	V	F9.4	CTD-oxygen voltage (secondary sensor)
39	CTDOXV_1_FLAG_W		I1	Quality flags for CTD data
40	THETA	DEG C	F9.4	Potential temperature (primary sensor)
41	THETA_FLAG_W		I1	Quality flags for CTD data
42	THETA_1	DEG C	F9.4	Potential temperature (secondary sensor)
43	THETA_1_FLAG_W		I1	Quality flags for CTD data
44	SIG0	KG/CUM	F9.4	Density (primary sensor)
45	SIG0_FLAG_W		I1	Quality flags for CTD data
46	SIG0_1	KG/CUM	F9.4	Density (secondary sensor)
47	SIG0_1_FLAG_W		I1	Quality flags for CTD data
48	XMISS	%TRANS	F9.3	Transmittance
49	XMISS_FLAG_W		I1	Quality flags for CTD data
50	XMISSCP	/METER	F9.4	Beam attenuation coefficient
51	XMISSCP_FLAG_W		I1	Quality flags for CTD data
52	XMISSV	V	F9.4	Transmissometer voltage
53	XMISSV_FLAG_W		I1	Quality flags for CTD data
54	FLUOR	MG/CUM	F9.3	Fluorescence
55	FLUOR_FLAG_W		I1	Quality flags for CTD data
56	TURB	FTU	F9.3	Turbidity
57	TURB_FLAG_W		I1	Quality flags for CTD data
58	SALNTY	PSS-78	F9.4	Bottle Salinity
59	SALNTY_FLAG_W		I1	Quality flags for water samples
60	SALNTY_1	PSS-78	F9.4	Bottle Salinity (replicate)
61	SALNTY_1_FLAG_W		I1	Quality flags for water samples
62	OXYGEN	UMOL/KG	F9.2	Bottle Oxygen
63	OXYGEN_FLAG_W		I1	Quality flags for water samples

Column No.	Column Heading	Units	Reporting Precision	FORTRAN Format	Comments
60	CHLWEL_FLAG_W	Mnemonics			Chlorophyll a Quality flags for water samples

ODV Format

Please see the following link for details of ODV Format and ODV Software.

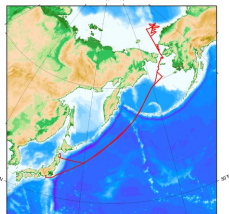
[Ocean Data View \(ODV\)](#)

Format Information

Column No.	Column Heading	Comments
1	EXPCODE	Cruise Label
2	Cruise	Cruise
3	Station	Station number_Cast number
4	Type	Station type
5	mon/day/yr	Cast date
6	hh:mm	Cast time
7	Latitude[degrees_north]	Latitude
8	Longitude[degrees_east]	Longitude
9	Bot. Depth[METERS]	Bottom depth
10	CTDDPT[METERS]	Depth
11	QF	Quality flags for CTD data
12	CTDPRS[DBAR]	Pressure
13	QF	Quality flags for CTD data
14	CTDTMP[ITS-90]	Temperature (primary sensor)
15	QF	Quality flags for CTD data
16	CTDTMP_1[ITS-90]	Temperature (secondary sensor)
17	QF	Quality flags for CTD data
18	CTDSAL[PSS-78]	Salinity (primary sensor)
19	QF	Quality flags for CTD data
20	CTDSAL_1[PSS-78]	Salinity (secondary sensor)
21	QF	Quality flags for CTD data
22	CTDCND[S/M]	Conductivity (primary sensor)
23	QF	Quality flags for CTD data
24	CTDCND_1[S/M]	Conductivity (secondary sensor)
25	QF	Quality flags for CTD data
26	CTDOXY[UMOL/KG]	CTD-oxygen (primary sensor)
27	QF	Quality flags for CTD data
28	CTDOXY_1[UMOL/KG]	CTD-oxygen (secondary sensor)
29	QF	Quality flags for CTD data
30	CTDOXY_s[UMOL/KG]	CTD-oxygen (primary sensor using secondary T and S)
31	QF	Quality flags for CTD data
32	CTDOXV[V]	CTD-oxygen voltage (primary sensor)
33	QF	Quality flags for CTD data
34	CTDOXV_1[V]	CTD-oxygen voltage (secondary sensor)
35	QF	Quality flags for CTD data
36	THETA[DEG C]	Potential temperature (primary sensor)
37	QF	Quality flags for CTD data
38	THETA_1[DEG C]	Potential temperature (secondary sensor)
39	QF	Quality flags for CTD data
40	SIG0[KG/CUM]	Density (primary sensor)
41	QF	Quality flags for CTD data
42	SIG0_1[KG/CUM]	Density (secondary sensor)
43	QF	Quality flags for CTD data
44	XMISS[%TRANS]	Transmittance
45	QF	Quality flags for CTD data
46	XMISSCP[METER]	Beam attenuation coefficient
47	QF	Quality flags for CTD data
48	XMISSV[V]	Transmissometer voltage
49	QF	Quality flags for CTD data
50	FLUOR[MG/CUM]	Fluorescence
51	QF	Quality flags for CTD data
52	TURB[FTU]	Turbidity
53	QF	Quality flags for CTD data
54	SALNTY[PSS-78]	Bottle Salinity
55	QF	Quality flags for water samples
56	SALNTY_1[PSS-78]	Bottle Salinity (replicate)
57	QF	Quality flags for water samples
58	OXYGEN[UMOL/KG]	Bottle Oxygen
59	QF	Quality flags for water samples
60	CHLWEL[MG/CUM]	Chlorophyll a
61	QF	Quality flags for water samples
62	SAMPNO	Sample Number
63	QF	Bottle quality flags

Related Information

MIRAI MR18-05C Cruise Track



 [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]
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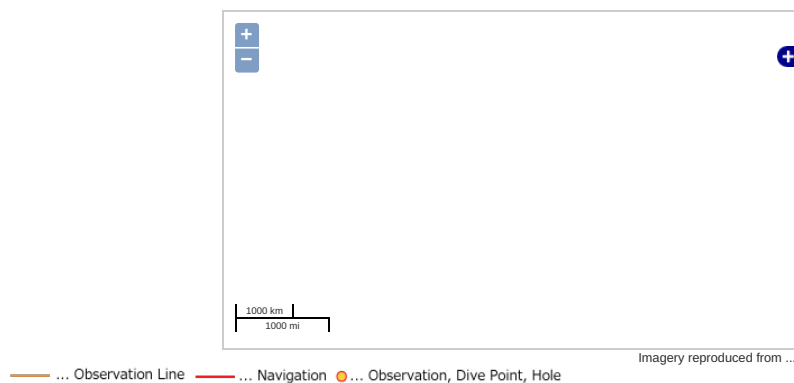
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Observation Items: Pressure, Temperature, Practical salinity, Dissolved oxygen, Potential temperature, Density, Transmittance, Fluorescence, Turbidity, Chlorophyll

Science Keywords:

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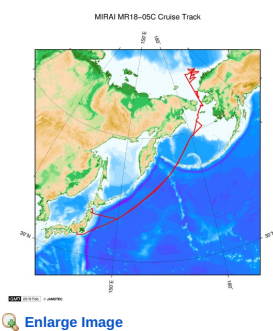
Observation Map



Data List

☐ File names
☐ MR1805C00_ex_bot.csv
☐ MR1805C00_odv_bot.txt

Related Information



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
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