

MIRAI MR11-05 Leg2 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-01-25

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

Cruise ID: [MR11-05 Leg2](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen, Fluorescence, Chlorophyll, PAR, Silicate, Nitrate, Nitrite, Phosphate, Ammonia, CFC11, CFC12, CFC113, Total inorganic carbon, Alkalinity, pH, DOC, Potential temperature, Density

Science Keywords:

OCEANS > OCEAN CHEMISTRY > AMMONIA
OCEANS > OCEAN CHEMISTRY > DISSOLVED GASES
OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON
OCEANS > OCEAN CHEMISTRY > NITRITE
OCEANS > OCEAN CHEMISTRY > NITRATE
OCEANS > OCEAN CHEMISTRY > NUTRIENTS
OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN CHEMISTRY > pH
OCEANS > OCEAN CHEMISTRY > PHOSPHATE
OCEANS > OCEAN CHEMISTRY > SILICATE
OCEANS > OCEAN CHEMISTRY > SALINITY
OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY
OCEANS > OCEAN OPTICS > PHOTOSYNTHETICALLY ACTIVE RADIATION
OCEANS > OCEAN TEMPERATURE > SEA SURFACE TEMPERATURE
OCEANS > OCEAN CHEMISTRY > ALKALINITY
OCEANS > OCEAN CHEMISTRY > CARBON
OCEANS > OCEAN CHEMISTRY > OCEAN TRACERS
OCEANS > OCEAN OPTICS > FLUORESCENCE
OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR11-05_leg1-2_all.pdf

For Using Data

Principal Investigator

CTDTMP : Masahide Wakita (JAMSTEC)
SBE35 : Masahide Wakita (JAMSTEC)
CTDSAL : Masahide Wakita (JAMSTEC)
SALNTY : Masahide Wakita (JAMSTEC)
CTDOXY : Masahide Wakita (JAMSTEC)
OXYGEN : Masahide Wakita (JAMSTEC)
OPTOXY : Masahide Wakita (JAMSTEC)
FLUOR : Masahide Wakita (JAMSTEC)
CHLORA : Kazuhiko Matsumoto (JAMSTEC)
CHLWELSH : Kazuhiko Matsumoto (JAMSTEC)
PAR : Masahide Wakita (JAMSTEC)
SILCAT : Michio Aoyama (Meteorological Research Institute)/Masahide Wakita (JAMSTEC)
NITRAT : Michio Aoyama (Meteorological Research Institute)/Masahide Wakita (JAMSTEC)
NITRIT : Michio Aoyama (Meteorological Research Institute)/Masahide Wakita (JAMSTEC)
PHSPHT : Michio Aoyama (Meteorological Research Institute)/Masahide Wakita (JAMSTEC)
NH4 : Michio Aoyama (Meteorological Research Institute)/Masahide Wakita (JAMSTEC)
CFCs : Ken-ichi Sasaki/Masahide Wakita (JAMSTEC)
TCARBN : Masahide Wakita (JAMSTEC)
ALKALI : Masahide Wakita (JAMSTEC)
PH : Masahide Wakita (JAMSTEC)
DOC : Masahide Wakita (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



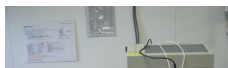
Instrument:
Total dissolved inorganic carbon measurement system (MR11-05 Leg1 -)



Instrument:
Gas chromatograph



Instrument:
pH meter (MR02-K03 -)

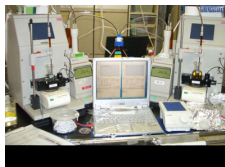


Instrument:
Nutrient analyzer(5ch) (MR09-02 -)



Instrument:
Titrator for DO (- MR11-05 Leg2)





Instrument:

Fluorometer (TURNER DESIGNS)



Notice

- Temperature data meserved by a mercury thermometer is listed in CTDTMP column at SAMPNO 0 which means sampled by bucket. Please notice that this data is different from other data in format (f9.1) and instrument.
- 28 Feb. 2014 The data flag of MR110502_ex_bot.csv SALNTY are corrected. Because those data flag was used 0 instead of 2.

Information on CTD data

(1) Temperature sensor

Model: SBE03, Sea-Bird Electronics, Inc.
 Measurement range: -5.0 to +35degC
 Accuracy: 0.001degC
 Resolution: 0.0002degC

(2) Salinity sensor

Model: SBE04, Sea-Bird Electronics, Inc.
 Measurement range: 0.0 to 7S/m
 Accuracy: 0.0003S/m
 Resolution: 0.00004S/m

(3) Pressure sensor

Model: SBE9plus, Sea-Bird Electronics, Inc.
 Measurement range: up to 10500m
 Accuracy: 0.015%F.S.
 Resolution: 0.001%F.S.

(4) DO sensor

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

(5) Optode oxygen sensor

Model: RINKO-III (JFE Advantech Co. Ltd.)
 Measurement range: 0 to 200%
 Accuracy: $\pm 2\%$ F.S.
 Resolution: 0.01 to 0.04%

(6) Fluorometer

Model: (Seapoint Sensors, Inc.)
 Measurement range : 0-5ug/l
 Resolution: 0.02ug/l

(7) Deep Ocean Standards Thermometer

Model: SBE 35, (Sea-Bird Electronics, Inc.)

(8) PAR sensor

Model: (Satlantic Inc.)

Information on Chemical and Biological data

1. Dissolved Oxygen

(1) Instruments :

Burette: APB-510 and APB-620 (Kyoto Electronic Co. Ltd.) / 10 cm³ of titration vessel
 Detector : Automatic photometric titrator DOT-01 (Kimoto Electronic Co. Ltd)
 Software : DOT controller Ver.2.2.1

(2)Methods: Winkler method

(3)Precision: Standard deviation 0.09 $\mu\text{mol kg}^{-1}$

(4)Reference Material/Calibration: CSK standard of potassium iodate Lot EPJ3885 (Wako Pure Chemical Industries Ltd.,)0.0100N

2. Salinity

(1)Instruments: Autosol salinometer model 8400B (Guildline Instruments Ltd.)

(2)Methods: -

(3)Precision: The average and standard deviation of absolute defference were 0.0002 and 0.0001 in salinity.

(4)Reference Material/Calibration: IAPSO Standard Sea Water batch P152 (Ocean Scientific International Ltd.)

3. Silicate

(1)Instruments: BL TEC K.K QuAAtro 2-HR

(2)Methods: Molybdenum blue method

- (3)Precision: C.V. 0.10%
- (4)Reference Material/Calibration: RMNS, Silicon standard solution SiO₂ in NaOH 0.5 mol/L CertiPUR® (Merck KGaA)

4. Nitrate

- (1)Instruments: BL TEC K.K. QuAAtro 2-HR
- (2)Methods: Diazotization method (reduced to nitrite by Cd - Cu tube)
- (3)Precision: C.V. 0.09%
- (4)Reference Material/Calibration: RMNS, potassium nitrate 99.995 suprapur® (Merck KGaA)

5. Nitrite

- (1)Instruments: BL TEC K.K. QuAAtro 2-HR
- (2)Methods: Diazotization method
- (3)Precision: C.V. 0.21%
- (4)Reference Material/Calibration: RMNS, sodium nitrite (Wako Pure Chemical Industries, Ltd.)

6. Phosphate

- (1)Instruments: BL TEC K.K. QuAAtro 2-HR
- (2)Methods: Molybdenum blue method
- (3)Precision: C.V. 0.18%
- (4)Reference Material/Calibration: RMNS, potassium dihydrogen phosphate anhydrous 99.995 suprapur® (Merck KGaA)

7. Ammonia

- (1)Instruments : BL TEC K.K. QuAAtro 2-HR
- (2)Methods : Indophenol method
- (3)Precision : C.V. 0.26%
- (4)Reference Material/Calibration : ammonium sulfate (Wako Pure Chemical Industries, Ltd.)

8. Total inorganic carbon

- (1)Instruments: TCO₂ measuring system (Nippon ANS, Inc.) equipped with coulometer Model seacat2000(Nippon ANS, Inc.)
- (2)Methods: coulometry
- (3)Precision: average of the differences 1.06umol kg⁻¹, standard deviation 0.95umol kg⁻¹
- (4)Reference Material/Calibration: -

9. Total alkalinity

- (1)Instruments: Spectrophotometric system(Nippon ANS, Inc.).
The system comprises of a spectrophotometer (Carry 50 Scan, Varian)
- (2)Methods: Single step acid additional procedure/spectrophotometry
- (3)Precision: average of the differences 0.7umol kg⁻¹, standard deviation 0.6umol kg⁻¹
- (4)Reference Material/Calibration: -

10. pH

- (1)Instruments: pH/Ion meter Radiometer PHM240 (Radiometer Analytical SAS)
- (2)Methods: potentiometric methods
- (3)Precision: average 0.0001 pH unit, standard deviation 0.001 pH units
- (4)Reference Material/Calibration: total hydrogen ion scale

11. CFCs

- (1)Instruments : Gas chromatograph (GC-14B: Shimadzu Ltd.)
- (2)Methods : see "Cruise report"
- (3)Precision : -
- (4)Reference Material/Calibration : -

12. Chlorophyll a

- (1)Instruments : Fluorophotometer model 10-AU-005 (Turner design)
- (2)Methods : Extract in N,N-dimethylformamide / fluorometric determination (Non-acidification method and Acidification method)
- (3)Precision : -
- (4)Reference Material/Calibration : -

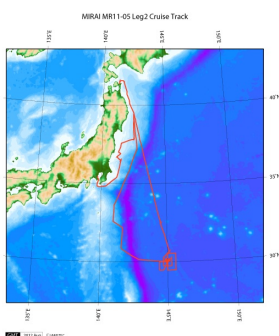
13. DOC

- (1)Instruments : Shimadzu TOC-V (Shimadzu Co.)
- (2)Methods : High temperature catalytic oxidation
- (3)Precision : -
- (4)Reference Material/Calibration : -

About this data

There are some description error for nutrient data of this cruise.
Please refer to the errata of the cruise report.

Related Information



MR11-05 Leg2

Ship Name: MIRAI
Period: 2011-07-17 - 2011-08-04
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station S1, Station KEO]
Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback
Title:

 [Enlarge Image](#)

Update History

2018-01-25	An observation data was registerd.
2017-07-28	An observation data was registerd.
2015-05-29	An observation data was registerd.
2015-03-05	An observation data was registerd.
2014-09-03	An observation data was registerd.
2014-02-28	An observation data was registerd.
2013-09-12	An observation data was registerd.

JAMSTEC

[Site Policy](#)

[Privacy Policy](#)

[Application for Data and Samples](#)

[Data Policy](#)

What's New

[Update History](#)

[Feeds](#)

Lists

[Publication List](#)

[Amount of Public Info.](#)

Data

[Map Search](#)

[Data Tree](#)

[Detailed Search](#)

Information of the Ships

[NATSUSHIMA](#)

[KAIYO](#)

[YOKOSUKA](#)

[MIRAI](#)

[KAIREI](#)

[CHIKYU](#)

[KAIMEI](#)

[SHINSEI MARU](#)

[HAKUHO MARU](#)

Information of the Submersibles

[KAIKO](#)

[SHINKAI 2000](#)

[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:

Go

Go to a Dive Information

Dive ID:

Go

Copyright 2011 Japan Agency for Marine-Earth Science and Technology



JAMSTEC

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

MIRAI MR11-05 Leg2 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-01-25

ReadMe Observation Data **Data Format** Quality Information

Cruise ID: [MR11-05 Leg2](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

Data Policy: [JAMSTEC](#)

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	Expedition code
2	SECT		A6	For WOCE data the WHP section identifier
3	STNNBR		A6	Station number
4	CASTNO		I3	Cast number
5	SAMPNO		A7	Sample number
6	BTLNBR		A7	Bottle identification number
7	BTLNBR_FLAG_W		I1	Bottle quality flag
8	DATE		I8	Cast date(UTC)
9	TIME	UTC	I4	Cast time (UTC)
10	LATITUDE	DEG	F8.3	LATITUDE
11	LONGITUDE	DEG	F9.3	LONGITUDE
12	DEPTH	M	I5	Reported depth to bottom.
13	CTDDPT	M	F9.1	Depth
14	CTDDPT_FLAG_W		I1	Quality flag for CTD data
15	CTDPRS	DBAR	F9.1	Pressure
16	CTDPRS_FLAG_W		I1	Quality flag for CTD data
17	CTDTMP	ITS-90	F9.4	Temperature
18	CTDTMP_FLAG_W		I1	Quality flag for CTD data
19	SBE35	ITS-90	F10.5	Temperature from Deep Ocean Standards Thermometer
20	SBE35_FLAG_W		I1	Quality flag for CTD data
21	CTDSAL	PSS-78	F9.4	CTD Salinity sensor
22	CTDSAL_FLAG_W		I1	Quality flag for CTD data
23	SALNTY	PSS-78	F9.4	Salinity
24	SALNTY_FLAG_W		I1	Quality flags for water samples
25	CTDOXY	UMOL/KG	F9.2	CTD Oxygen sensor
26	CTDOXY_FLAG_W		I1	Quality flag for CTD data
27	OPTOXY	UMOL/KG	F9.2	Optode oxygen
28	OPTOXY_FLAG_W		I1	Quality flag for CTD data
29	OXYGEN	UMOL/KG	F9.2	Oxygen
30	OXYGEN_FLAG_W		I1	Quality flags for water samples
31	FLUOR	UG/L	F9.3	Fluorometer
32	FLUOR_FLAG_W		I1	Quality flag for CTD data
33	CHLORA	MG/CUM	F9.2	Chlorophyll a
34	CHLORA_FLAG_W		I1	Quality flags for water samples
35	CHLWELSH	MG/CUM	F9.2	Chlorophyll a (Welschmeyer method)
36	CHLWELSH_W		I1	Quality flags for water samples
37	EDPAR	UMOL-PHOTONS/M2/S	F9.3	Ed PAR
38	EDPAR_FLAG_W		I1	Quality flag for CTD data
39	SILCAT	UMOL/KG	F9.2	Silicate
40	SILCAT_FLAG_W		I1	Quality flags for water samples
41	SILUNC	UMOL/KG	F9.2	Uncertainty of Silicate data
42	NITRAT	UMOL/KG	F9.2	Nitrate
43	NITRAT_FLAG_W		I1	Quality flags for water samples
44	NRAUNC	UMOL/KG	F9.2	Uncertainty of Nitrate data
45	NITRIT	UMOL/KG	F9.2	Nitrite
46	NITRIT_FLAG_W		I1	Quality flags for water samples
47	NRIUNC	UMOL/KG	F9.2	Uncertainty of Nitrite data
48	PHSPHT	UMOL/KG	F9.3	Phosphate
49	PHSPHT_FLAG_W		I1	Quality flags for water samples
50	PHPUNC	UMOL/KG	F9.3	Uncertainty of Phosphate data
51	NH4	UMOL/KG	F9.2	Ammonium
52	NH4_FLAG_W		I1	Quality flags for water samples
53	NH4UNC	UMOL/KG	F9.2	Uncertainty of Ammonium data
54	CFC-11	PMOL/KG	F9.3	Freon-11
55	CFC-11_FLAG_W		I1	Quality flags for water samples
56	CFC-12	PMOL/KG	F9.3	Freon-12
57	CFC-12_FLAG_W		I1	Quality flags for water samples
58	CFC113	PMOL/KG	F9.3	Freon-113
59	CFC113_FLAG_W		I1	Quality flags for water samples
60	TCARBN	UMOL/KG	F9.1	Total carbon
61	TCARBN_FLAG_W		I1	Quality flags for water samples
62	ALKALI	UMOL/KG	F9.1	Total alkalinity
63	ALKALI_FLAG_W		I1	Quality flags for water samples

Column No.	Column Heading Mnemonic	Units Mnemonic	Reporting Precision FORTRAN Format	Comments
65	PH_FLAG_W		I1	Quality flags for water samples
66	DOC	UMOL/KG	F9.1	Dissolved organic carbon
67	DOC_FLAG_W		I1	Quality flags for water samples
68	THETA	DEG C	F9.4	Potential temperature
69	SIG0	KG/CUM	F9.4	Density

ODV Format

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

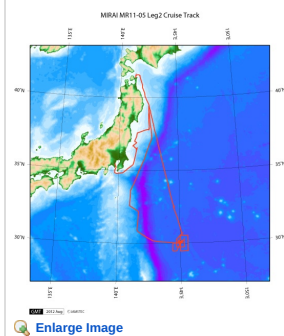
[Ocean Data View \(ODV\)](#)

Format Information

Column No.	Column Heading	Comments
1	Cruise	Cruise Label
2	Station	Station number_Cast number
3	Type	Station type
4	mon/day/yr	Cast date(UTC)
5	hh:mm	Cast time (UTC)
6	Latitude [degrees_north]	LATITUDE
7	Longitude [degrees_east]	LONGITUDE
8	Bot. Depth [m]	Reported depth to bottom.
9	CTDDPT[M]	Depth
10	QF	Quality flag for CTD data
11	CTDPRS[DBAR]	Pressure
12	QF	Quality flag for CTD data
13	CTDTMP[ITS-90]	Temperature
14	QF	Quality flag for CTD data
15	SBE35[ITS-90]	Temperature from Deep Ocean Standards Thermometer
16	QF	Quality flag for CTD data
17	CTDSAL[PSS-78]	CTD Salinity sensor
18	QF	Quality flag for CTD data
19	SALNTY[PSS-78]	Salinity
20	QF	Quality flags for water samples
21	CTDOXY[UMOL/KG]	CTD Oxygen sensor
22	QF	Quality flag for CTD data
23	OPTOXY[UMOL/KG]	Optode oxygen
24	QF	Quality flag for CTD data
25	OXYGEN[UMOL/KG]	Oxygen
26	QF	Quality flags for water samples
27	FLUOR[UG/L]	Fluorometer
28	QF	Quality flag for CTD data
29	CHLORA[MG/CUM]	Chlorophyll a
30	QF	Quality flags for water samples
31	CHLWELSH[MG/CUM]	Chlorophyll a (Welschmeyer method)
32	QF	Quality flags for water samples
33	EDPAR[UMOL-PHOTONS/M2/S]	Ed PAR
34	QF	Quality flag for CTD data
35	SILCAT[UMOL/KG]	Silicate
36	QF	Quality flags for water samples
37	SILUNC	Uncertainty of Silicate data
38	QF	Quality flags for water samples
39	NITRAT[UMOL/KG]	Nitrate
40	QF	Quality flags for water samples
41	NRAUNC	Uncertainty of Nitrate data
42	QF	Quality flags for water samples
43	NITRIT[UMOL/KG]	Nitrite
44	QF	Quality flags for water samples
45	NRIUNC	Uncertainty of Nitrite data
46	QF	Quality flags for water samples
47	PHSPHT[UMOL/KG]	Phosphate
48	QF	Quality flags for water samples
49	PHPUNC	Uncertainty of Phosphate data
50	QF	Quality flags for water samples
51	NH4[UMOL/KG]	Ammonium
52	QF	Quality flags for water samples
53	NH4UNC	Uncertainty of Ammonium data
54	QF	Quality flags for water samples
55	CFC-11[PMOL/KG]	Freon-11
56	QF	Quality flags for water samples
57	CFC-12[PMOL/KG]	Freon-12
58	QF	Quality flags for water samples
59	CFC113[PMOL/KG]	Freon-113
60	QF	Quality flags for water samples
61	TCARBN[UMOL/KG]	Total carbon
62	QF	Quality flags for water samples
63	ALKAL[UMOL/KG]	Total alkalinity
64	QF	Quality flags for water samples
65	PH	pH
66	QF	Quality flags for water samples
67	DOC[UMOL/KG]	Dissolved organic carbon
68	QF	Quality flags for water samples
69	THETA[DEG C]	Potential temperature
70	QF	Quality flag for CTD data

Column No.	Column Heading	Comments
71	SIG0[KG/CUM]	Density
72	QF	Quality flag for CTD data
73	SAMPNO	Sample number
74	QF	Bottle quality flag

Related Information



MR11-05 Leg2

Ship Name: MIRAI
Period: 2011-07-17 - 2011-08-04
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station S1, Station KEO]
Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback
Title:

Update History

2018-01-25	An observation data was registered.
2017-07-28	An observation data was registered.
2015-05-29	An observation data was registered.
2015-03-05	An observation data was registered.
2014-09-03	An observation data was registered.
2014-02-28	An observation data was registered.
2013-09-12	An observation data was registered.

JAMSTEC

Site Policy
Privacy Policy
Application for Data and Samples
Data Policy
What's New
Update History
Feeds

Lists

Publication List
Amount of Public Info.
Data
Map Search
Data Tree
Detailed Search

Information of the Ships

NATSUSHIMA
KAIYO
YOKOSUKA
MIRAI
KAIREI
CHIKYU
KAIMEI
SHINSEI MARU
HAKUHO MARU

Information of the Submersibles

KAIKO
SHINKAI 2000
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:

Go to a Dive Information

Dive ID:

Copyright 2011 Japan Agency for Marine-Earth Science and Technology



MIRAI MR11-05 Leg2 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-01-25

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

Cruise ID: [MR11-05 Leg2](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

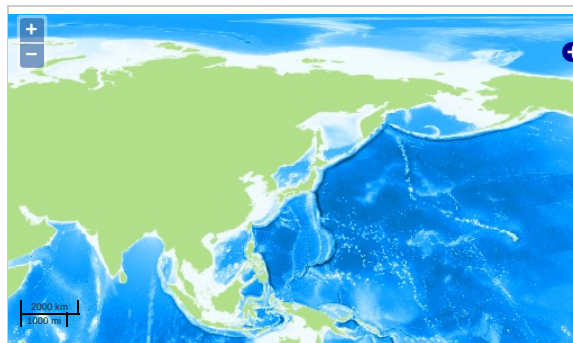
Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen, Fluorescence, Chlorophyll, PAR, Silicate, Nitrate, Nitrite, Phosphate, Ammonia, CFC11, CFC12, CFC113, Total inorganic carbon, Alkalinity, pH, DOC, Potential temperature, Density

Science Keywords:

OCEANS > OCEAN CHEMISTRY > AMMONIA
OCEANS > OCEAN CHEMISTRY > DISSOLVED GASES
OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON
OCEANS > OCEAN CHEMISTRY > NITRITE
OCEANS > OCEAN CHEMISTRY > NITRATE
OCEANS > OCEAN CHEMISTRY > NUTRIENTS
OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN CHEMISTRY > pH
OCEANS > OCEAN CHEMISTRY > PHOSPHATE
OCEANS > OCEAN CHEMISTRY > SILICATE
OCEANS > OCEAN CHEMISTRY > SALINITY
OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY
OCEANS > OCEAN OPTICS > PHOTOSYNTHETICALLY ACTIVE RADIATION
OCEANS > OCEAN TEMPERATURE > SEA SURFACE TEMPERATURE
OCEANS > OCEAN CHEMISTRY > ALKALINITY
OCEANS > OCEAN CHEMISTRY > CARBON
OCEANS > OCEAN CHEMISTRY > OCEAN TRACERS
OCEANS > OCEAN OPTICS > FLUORESCENCE
OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Observation Map



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

Imagery reproduced from ...

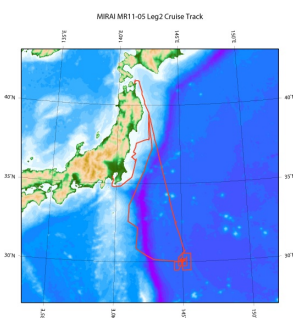
Data List

☐ File names

☐ MR110502_ex_bot.csv

☐ MR110502_odv_bot.txt

Related Information



MR11-05 Leg2

Ship Name: MIRAI

Period: 2011-07-17 - 2011-08-04

Chief Scientist: Makio Honda (JAMSTEC)

Project Name: [Station S1, Station KEO]

Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback

Title:

Update History

2018-01-25 An observation data was registered.

2017-07-28	An observation data was registerd.
2015-05-29	An observation data was registerd.
2015-03-05	An observation data was registerd.
2014-09-03	An observation data was registerd.
2014-02-28	An observation data was registerd.
2013-09-12	An observation data was registerd.

JAMSTEC

[Site Policy](#)

[Privacy Policy](#)

[Application for Data and Samples](#)

[Data Policy](#)

What's New

[Update History](#)

[Feeds](#)

Lists

[Publication List](#)

[Amount of Public Info.](#)

Data

[Map Search](#)

[Data Tree](#)

[Detailed Search](#)

Information of the Ships

[NATSUSHIMA](#)

[KAIYO](#)

[YOKOSUKA](#)

[MIRAI](#)

[KAIREI](#)

[CHIKYU](#)

[KAIMEI](#)

[SHINSEI MARU](#)

[HAKUHO MARU](#)

Information of the Submersibles

[KAIKO](#)

[SHINKAI 2000](#)

[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:

Go

Go to a Dive Information

Dive ID:

Go

Copyright 2011 Japan Agency for Marine-Earth Science and Technology



JAMSTEC

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