

MIRAI MR15-04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-07-20

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

Cruise ID: [MR15-04](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR15-04_all.pdf

[For Using Data](#)

Principal Investigator

Data Management Office

JAMSTEC / BPPT joint cruise in the Indonesian waters.

Use Constraints

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

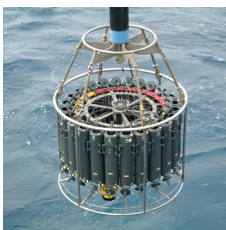
Data Citation

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

Instrument

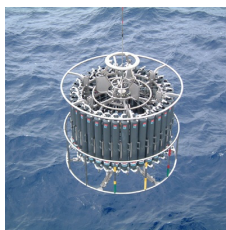
Instrument:

Water sampling system with CTD (30
litters * 24 bottles)



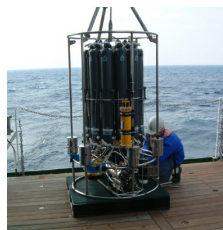
Instrument:

Water sampling system with CTD (12
litters * 36 bottles)



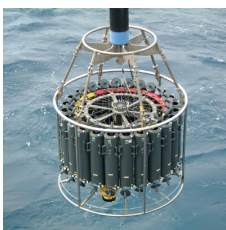
Instrument:

Water sampling system with CTD (12
litters * 12 bottles)



Instrument:

Conductivity temperature depth
measurements (CTD)



Overview

CTD(Conductivity-Temperature-Depth profiler) is used to observe the vertical profiles of temperature and conductivity.

Usually, this system is operated with multicylinder water sampler.

Observed signal is transmitted from sensor to the operation room on board using wire cable, and electric power is supplied from vessel to sensor.

Details of sensors attached to CTD system for MR15-04 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR15-04.

SEASAVE(ver 7.23.2) for data acquisition

SEASOFT(ver 7.23.2) for data processing

Data presented on this website is averaged over 1db.

System

· Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.

Serial number : 79492

Measurement range : up to 10500m

Accuracy : 0.015%F.S.

Resolution : 0.001% F.S.

· Temperature sensor

Model : SBE3, Sea-Bird Electronics, Inc.

Serial number : 031464

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

· Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 043036

Measurement range : 0.0 to 7 S/m
Accuracy : 0.0003 S/m
Resolution : 0.00004 S/m
· DO sensor
Model : SBE43, Sea-Bird Electronics,Inc.
Serial number : 430330
Measurement range : 120% of surface saturation
Accuracy : 2% of saturation

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
L01M001	79492	031464	043036	430330
L02M001	79492	031464	043036	430330
L03M001	79492	031464	043036	430330
L04M001	79492	031464	043036	430330
L05M001	79492	031464	043036	430330
L06M001	79492	031464	043036	430330
L07M001	79492	031464	043036	430330
L08M001	79492	031464	043036	430330
L09M001	79492	031464	043036	430330
L10M001	79492	031464	043036	430330
L11M001	79492	031464	043036	430330
L12M001	79492	031464	043036	430330
L13M001	79492	031464	043036	430330
L14M001	79492	031464	043036	430330
L15M001	79492	031464	043036	430330
L16M001	79492	031464	043036	430330
L17M001	79492	031464	043036	430330
L18M001	79492	031464	043036	430330
L19M001	79492	031464	043036	430330
L20M001	79492	031464	043036	430330
L21M001	79492	031464	043036	430330
L22M001	79492	031464	043036	430330
L23M001	79492	031464	043036	430330
L24M001	79492	031464	043036	430330
L25M001	79492	031464	043036	430330
L26M001	79492	031464	043036	430330
STNM001	79492	031464	043036	430330
STNM002	79492	031464	043036	430330
STNM003	79492	031464	043036	430330
STNM004	79492	031464	043036	430330
STNM005	79492	031464	043036	430330
STNM006	79492	031464	043036	430330
STNM007	79492	031464	043036	430330
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STNM041	79492	031464	043036	430330

STNM118	Year	Serial number of sensor	U43036	430330
STNM119	Pressure	Temperature	Salinity	Dissolved Oxygen
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STNM193	79492	031464	043036	430330
STNM194	79492	031464	043036	430330

STNM195	79492	031464	043036	430330
Cast name	Serial number of sensor			
Calibration Information	Pressure	Temperature	Salinity	Dissolved Oxygen

Calibration Information is as follows.

Calibration Information

Data processing

(1) Data processing sequence for SEASOFT is as follows;

"*"" is not SEASOFT original procedure.

command	function
datcnv	Convert raw data to engineering units, and store converted data in file.
alignctd	Align data relative to pressure(typically used for conductivity, temperature, and oxygen)
wildedit	Mark a data value with badflag to eliminate wild points.
celltm	Perform conductivity thermal mass correction.
filter	Low-pass filter columns of data.
wfilter	Median filter removes spikes of fluorometer data.
sectionu*	Extract rows of data from file.
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
Derive	Calculate oxygen. (with oxygen sensor)
binavg	Average data, basing bins on pressure, depth, scan number, or time range.
bottomcut*	Bottom cut deletes discontinuous scan bottom data if it's created by BINAVG.
derive	Calculate salinity, density, etc..
split	Split data in file into upcast and downcast files.

(2) Quality control

QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure.

- 1) The gradient check of adjacent depth data
- 2) The density inversion check
- 3) The broad range check set up at given ocean space and depth

Please see the site of NODC of the following link for quality control procedure in detail.

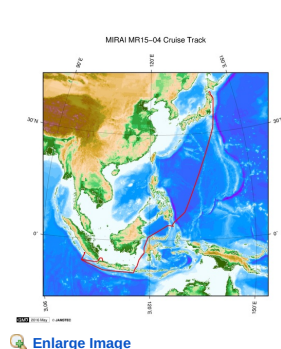
QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA

In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

Note

(1) In this cruise, there is extra data (fluorescence intensity, distance to bottom) in additional to temperature, salinity, dissolved oxygen that has been opened to the public. Please contact us from "Contact Us" above if necessary.

Related Information



[Enlarge Image](#)

MR15-04

Ship Name: MIRAI

Period: 2015-11-05 - 2015-12-20

Chief Scientist: Masaki Katsumata (JAMSTEC)

Proposal ▶ Observational study of the heavy rain zone in the tropical eastern Indian ocean

Title:

Update History

2018-07-20	An observation data was registerd.
2018-01-31	An observation data was registerd.

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KAIYO

YOKOSUKA

MIRAI

KAIREI

CHIKYU

KAIMEI

SHINSEI MARU

HAKUHO MARU

Information of the Submersibles

KAICO

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)

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MIRAI MR15-04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-07-20

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 Cruise ID: [MR15-04](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

 Data Policy: [JAMSTEC](#)

CTD DMO

Format Description for the Corrected Data

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](#)

Data in following cruise is not expressed with Exchange Format. Please see the site of each cruise for format.

MR02-K05 Leg1

MR04-05

Format Description for the QCed Data

Each data file contains one line header (meta data) followed by data lines for each cast.

The number of data lines are recorded in the header.

Header part

No.	Column	Content	Format	Remarks
1	1	Header ID	a1	fixed as '#'
2	3 - 6	Data ID	a4	CTD
3	8 - 22	Cruise ID	a15	MYYY-(K)XX(_legx)
4	24 - 31	Cast name	a8	
5	33 - 40	Date	i8	YYYYMMDD (UTC)
6	42 - 45	Time	i4	hhmm (UTC)
7	47 - 55	Latitude	i2,a1,f5.2,a1	dd-mm.mmN(S)
8	57 - 66	Longitude	i3,a1,f5.2,a1	ddd-mm.mmE(W)
9	68 - 71	Number of data lines	i4	
10	72 - 73	Terminator	-	CR+LF

Data part

No.	Column	Content	Unit	Format	Remarks
1	1 - 11	Pressure	dbar	f11.3	
2	12 - 22	Temperature	deg-C	f11.4	ITS-90
3	23 - 33	Salinity	PSU	f11.4	PSS-78
4	34 - 44	Dissolved oxygen	umol/kg	f11.3	
5	45 - 55	Flag	-	i11	1 - 7 : space 8 : flag of pressure 9 : flag of temperature 10 : flag of salinity 11 : flag of dissolved oxygen * reference : Definition of Quality Control Flags
6	56 - 57	Terminator	-	-	CR+LF

Each contents of the data part is stored in 11 bytes.

Missing value is presented by '-5', and error value is presented by '-9'.

Definition of Quality Control Flags

1. Depth Flags

- 0 - accepted value
- 1 - error in recorded depth (same or less than previous depth)
- 2 - density inversion

2. Observed Level Flags

- N - missing value
- 0 - accepted value
- 1 - range outlier (outside of broad range check)
- 2 - failed inversion check
- 3 - failed gradient check
- 4 - zero anomaly
- 5 - failed combined gradient and inversion checks
- 6 - failed range and inversion checks
- 7 - failed range and gradient checks
- 8 - failed range and zero anomaly checks
- 9 - failed range and combined gradient and inversion checks
- A - failed visual check

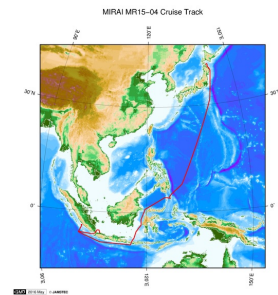
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



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MR15-04

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Period: 2015-11-05 - 2015-12-20

Chief Scientist: Masaki Katsumata (JAMSTEC)

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Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

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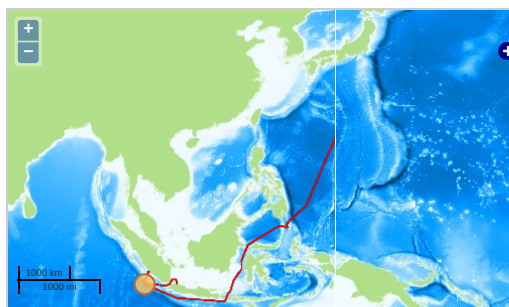
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN > WATER
TEMPERATURE TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY

Observation Map

1. Clicking the icon displays a balloon with observation information.
2. Then click the observation name, figures will be displayed.

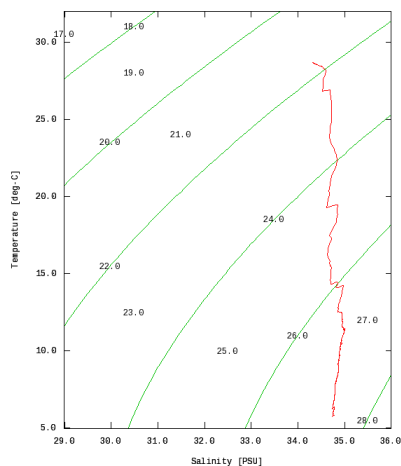


Figures

L01M001



MR15-04: L01M001
Conductivity-Temperature-Depth Profiler (CTD): Salinity




































































Only values evaluated as "good : all flags are 0" are plotted in profiles.
Please see Format Page for the definition of quality flags.
















































































Data List















































[Add to Basket](#)

File names

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	ex_read2.f (Sample Program)

● Observation List
The list of observation is shown as follows.

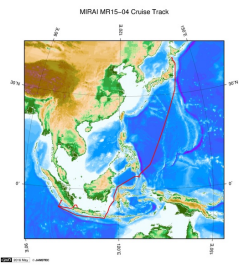
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L02M001	2015-11-21 02:02	-5.9998	101.0013
L03M001	2015-11-21 03:58	-5.9156	101.0426
L04M001	2015-11-21 05:30	-5.8363	101.0815
L05M001	2015-11-21 06:59	-5.7498	101.1268
L06M001	2015-11-21 08:58	-5.6671	101.1658
L07M001	2015-11-21 10:24	-5.5838	101.2073
L08M001	2015-11-21 11:56	-5.5003	101.2456
L09M001	2015-11-21 13:50	-5.4155	101.2920
L10M001	2015-11-21 15:29	-5.3324	101.3313
L11M001	2015-11-21 17:13	-5.2485	101.3703
L12M001	2015-11-21 19:07	-5.1655	101.4143
L13M001	2015-11-21 20:33	-5.0806	101.4528
L14M001	2015-11-21 22:04	-4.9996	101.5006
L15M001	2015-11-21 23:55	-4.9166	101.5410
L16M001	2015-11-22 01:22	-4.8326	101.5838
L17M001	2015-11-22 03:12	-4.7516	101.6261
L18M001	2015-11-22 05:16	-4.6660	101.6683
L19M001	2015-11-22 06:46	-4.5826	101.7091
L20M001	2015-11-22 08:17	-4.5003	101.7493
L21M001	2015-11-22 10:07	-4.4173	101.7925
L22M001	2015-11-22 11:42	-4.3323	101.8311
L23M001	2015-11-22 13:15	-4.2488	101.8740
L24M001	2015-11-22 15:03	-4.1666	101.9155
L25M001	2015-11-22 16:36	-4.0824	101.9598
L26M001	2015-11-22 17:59	-3.9965	101.9973
STNM001	2015-11-23 05:28	-4.0671	101.8998
STNM002	2015-11-23 08:29	-4.0805	101.9021
STNM003	2015-11-23 11:32	-4.0823	101.9296
STNM004	2015-11-23 14:29	-4.0826	101.8851
STNM005	2015-11-23 17:29	-4.0483	101.8871
STNM006	2015-11-23 20:32	-4.0668	101.8818
STNM007	2015-11-23 23:32	-4.0726	101.8796
STNM008	2015-11-24 02:31	-4.0433	101.8836

STNM000 Observation	2015-11-24 05:34 Time and Date	70.7000 Lat. [°]	101.0000 Lon. [°]
STNM009	2015-11-24 05:34	-4.0596	101.8836
STNM010	2015-11-24 08:30	-4.0548	101.8908
STNM011	2015-11-24 11:28	-4.0673	101.8848
STNM012	2015-11-24 14:30	-4.0515	101.8831
STNM013	2015-11-24 17:28	-4.0435	101.8971
STNM014	2015-11-24 20:32	-4.0601	101.8791
STNM015	2015-11-24 23:31	-4.0705	101.8840
STNM016	2015-11-25 02:31	-4.0573	101.8951
STNM017	2015-11-25 05:32	-4.0506	101.9091
STNM018	2015-11-25 08:32	-4.0566	101.9003
STNM019	2015-11-25 11:29	-4.0681	101.8803
STNM020	2015-11-25 14:28	-4.0700	101.8893
STNM021	2015-11-25 17:29	-4.0540	101.8868
STNM022	2015-11-25 20:32	-4.0645	101.9121
STNM023	2015-11-25 23:31	-4.0664	101.8833
STNM024	2015-11-26 02:32	-4.0606	101.8988
STNM025	2015-11-26 05:31	-4.0528	101.9051
STNM026	2015-11-26 08:29	-4.0661	101.9016
STNM027	2015-11-26 11:29	-4.0675	101.8893
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STNM029	2015-11-26 17:27	-4.0526	101.9051
STNM030	2015-11-26 20:32	-4.0664	101.9030
STNM031	2015-11-26 23:37	-4.0728	101.8905
STNM032	2015-11-27 02:32	-4.0855	101.9036
STNM033	2015-11-27 05:31	-4.0820	101.9051
STNM034	2015-11-27 08:30	-4.0666	101.9001
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STNM037	2015-11-27 17:29	-4.0448	101.9053
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STNM039	2015-11-27 23:32	-4.0691	101.8878
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STNM041	2015-11-28 05:32	-4.0720	101.8950
STNM042	2015-11-28 08:30	-4.0543	101.8901
STNM043	2015-11-28 11:29	-4.0595	101.8820
STNM044	2015-11-28 14:30	-4.0413	101.8961
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STNM046	2015-11-28 20:33	-4.0521	101.9268
STNM047	2015-11-28 23:31	-4.0679	101.8881
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STNM055	2015-11-29 23:33	-4.0660	101.8846
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STNM057	2015-11-30 05:31	-4.0693	101.8928
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STNM062	2015-11-30 20:32	-4.0805	101.8868
STNM063	2015-11-30 23:31	-4.0695	101.8841
STNM064	2015-12-01 02:30	-4.0541	101.8991
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STNM095	2015-12-04 23:30	-4.0576	101.8900
STNM096	2015-12-05 02:31	-4.0736	101.8803
STNM097	2015-12-05 05:30	-4.0690	101.8785
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STNM103	2015-12-05 23:31	-4.0653	101.8870
STNM104	2015-12-06 02:31	-4.0733	101.9000
STNM105	2015-12-06 05:30	-4.0761	101.8921
STNM106	2015-12-06 08:30	-4.0576	101.9003
STNM107	2015-12-06 11:30	-4.0671	101.8856
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STNM109	2015-12-06 17:29	-4.0790	101.8910
STNM110	2015-12-06 20:30	-4.0658	101.8971
STNM111	2015-12-06 23:32	-4.0688	101.8848
STNM112	2015-12-07 02:32	-4.0668	101.9011
STNM113	2015-12-07 05:31	-4.0640	101.8878
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STNM125	2015-12-08 17:29	-4.0693	101.8835
STNM126	2015-12-08 20:31	-4.0541	101.8948
STNM127	2015-12-08 23:31	-4.0675	101.8858
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STNM151	2015-12-11 23:32	-4.0646	101.8890
STNM152	2015-12-12 02:30	-4.0536	101.9081
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STNM155	2015-12-12 11:29	-4.0664	101.8891
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STNM159	2015-12-12 23:30	-4.0543	101.8980
STNM160	2015-12-13 02:30	-4.0568	101.8948
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STNM162	2015-12-13 08:31	-4.0510	101.8995
STNM163	2015-12-13 11:29	-4.0573	101.8938
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STNM165	2015-12-13 17:29	-4.0553	101.8935
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STNM167	2015-12-13 23:30	-4.0628	101.8980
STNM168	2015-12-14 02:31	-4.0533	101.8970
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STNM171	2015-12-14 11:25	-4.0556	101.8925


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STNM175	2015-12-14 23:31	-4.0535	101.8866
STNM176	2015-12-15 02:31	-4.0475	101.9070
STNM177	2015-12-15 05:31	-4.0481	101.8943
STNM178	2015-12-15 08:30	-4.0710	101.8930
STNM179	2015-12-15 11:18	-4.0545	101.8981
STNM180	2015-12-15 14:29	-4.0590	101.9261
STNM181	2015-12-15 17:27	-4.0858	101.9063
STNM182	2015-12-15 20:28	-4.0695	101.8920
STNM183	2015-12-15 23:26	-4.0538	101.8944
STNM184	2015-12-16 02:27	-4.0535	101.8920
STNM185	2015-12-16 05:30	-4.0695	101.9076
STNM186	2015-12-16 08:30	-4.0616	101.9004
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STNM188	2015-12-16 14:24	-4.0583	101.8876
STNM189	2015-12-16 17:30	-4.0550	101.9071
STNM190	2015-12-16 20:31	-4.0626	101.8973
STNM191	2015-12-16 23:31	-4.0593	101.8926
STNM192	2015-12-17 02:31	-4.0606	101.8936
STNM193	2015-12-17 05:29	-4.0546	101.8958
STNM194	2015-12-17 08:31	-4.0593	101.8843
STNM195	2015-12-17 11:30	-4.0651	101.8895

Related Information



MIRAI MR15-04 Cruise Track

MR15-04
Ship Name: MIRAI
Period: 2015-11-05 - 2015-12-20
Chief Scientist: Masaki Katsumata (JAMSTEC)
Proposal ▶ Observational study of the heavy rain zone in the tropical eastern Indian ocean
Title:

 [Enlarge Image](#)

Update History

2018-07-20	An observation data was registered.
2018-01-31	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:

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY