

MIRAI MR08-03 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR08-03](#)

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/MR08-03_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:

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



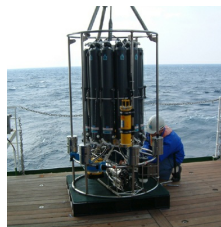
Instrument:

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 MR08-03 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR08-03.

SEASAVE(ver 5.27b) for data acquisition

SEASOFT(ver 5.27b) for data processing

Data presented on this website is averaged over 1db.

System

• Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.

Serial number : 79511

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 : 034421

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 041206

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 : 430394

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
C01M01	79511	034421	041206	430394
C01M02	79511	034421	041206	430394
C01M03	79511	034421	041206	430394
C01M04	79511	034421	041206	430394
C02M01	79511	034421	041206	430394
C03M01	79511	034421	041206	430394
C04M01	79511	034421	041206	430394
C04M02	79511	034421	041206	430394
C05M01	79511	034421	041206	430394
C06M01	79511	034421	041206	430394
C08M01	79511	034421	041206	430394
C07M01	79511	034421	041206	430394
C07M02	79511	034421	041206	430394
C07M03	79511	034421	041206	430394
C07M04	79511	034421	041206	430394
C09M01	79511	034421	041206	430394
C09M02	79511	034421	041206	430394
C10M01	79511	034421	041206	430394
C11M01	79511	034421	041206	430394
C11M02	79511	034421	041206	430394
C11M03	79511	034421	041206	430394
C11M04	79511	034421	041206	430394
C18M01	79511	034421	041206	430394
C18M02	79511	034421	041206	430394
C18M03	79511	034421	041206	430394
C18M04	79511	034421	041206	430394
C18M05	79511	034421	041206	430394
C17M01	79511	034421	041206	430394
C16M01	79511	034421	041206	430394
C15M01	79511	034421	041206	430394
C15M02	79511	034421	041206	430394
C12M01	79511	034421	041206	430394
C12M02	79511	034421	041206	430394
C12M03	79511	034421	041206	430394
C12M04	79511	034421	041206	430394
C12M05	79511	034421	041206	430394
C13M01	79511	034421	041206	430394
C14M01	79511	034421	041206	430394
C18M06	79511	034421	041206	430394
C18M07	79511	034421	041206	430394
C18M08	79511	034421	041206	430394
C18M09	79511	034421	041206	430394
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C18M12	79511	034421	041206	430394
C18M13	79511	034421	041206	430394
C19M01	79511	034421	041206	430394
C20M01	79511	034421	041206	430394
C20M02	79511	034421	041206	430394
C21M01	79511	034421	041206	430394
C22M01	79511	034421	041206	430394
C23M01	79511	034421	041206	430394
C22M02	79511	034421	041206	430394
C22M04	79511	034421	041206	430394
C22M05	79511	034421	041206	430394
C24M01	79511	034421	041206	430394
C24M02	79511	034421	041206	430394
C25M01	79511	034421	041206	430394
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C26M02	79511	034421	041206	430394
C26M03	79511	034421	041206	430394
C26M04	79511	034421	041206	430394
C26M05	79511	034421	041206	430394
C27M01	79511	034421	041206	430394
C28M01	79511	034421	041206	430394
C29M02	79511	034421	041206	430394
C32M01	79511	034421	041206	430394
C31M01	79511	034421	041206	430394

Cast name	Serial number of sensor	Pressure	Temperature	Salinity	Dissolved Oxygen
C30M01	79511	034421	041206	430394	
C32M02	79511	034421	041206	430394	
C32M03	79511	034421	041206	430394	
C32M04	79511	034421	041206	430394	
C33M01	79511	034421	041206	430394	
C34M01	79511	034421	041206	430394	
C34M02	79511	034421	041206	430394	
C34M03	79511	034421	041206	430394	
C34M04	79511	034421	041206	430394	
C34M05	79511	034421	041206	430394	
C34M06	79511	034421	041206	430394	

Calibration Information

Calibration Information is as follows.

[Calibration Information](#)

Data processing

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

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.
section	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.
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.

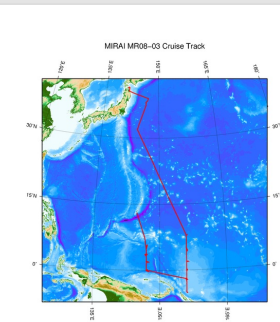
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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, transmittance, distance to bottom) in addition 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](#)

MR08-03

Ship Name: MIRAI
Period: 2008-07-02 - 2008-08-06
Chief Scientist: Yuji Kashino (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS), Station KEO]
Proposal Tropical Ocean Climate Study
Title:

Update History

2017-06-22	An observation data was registered.
2014-07-31	An observation data was registered.
2014-02-15	An observation data was registered.
2014-02-13	An observation data was registered.
2013-03-26	An observation data was registered.
2012-10-27	An observation data was registered.

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SHINSEI MARU
HAKUHO MARU

Information of the Submersibles

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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:

Go to a Dive Information

Dive ID:



MIRAI MR08-03 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR08-03](#)

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

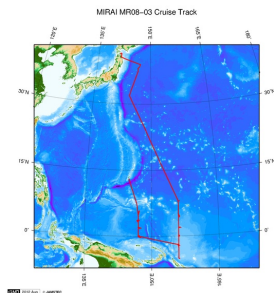
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[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read2.f](#)

Related Information



[Enlarge Image](#)

MR08-03

Ship Name: MIRAI

Period: 2008-07-02 - 2008-08-06

Chief Scientist: Yuji Kashino (JAMSTEC)

Project Name: [Tropical Ocean Climate Study (TOCS), Station KEO]

Proposal Tropical Ocean Climate Study

Title:

Update History

2017-06-22	An observation data was registerd.
2014-07-31	An observation data was registerd.
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2014-02-13	An observation data was registerd.
2013-03-26	An observation data was registerd.
2012-10-27	An observation data was registerd.

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KAIMEI
SHINSEI MARU
HAKUHO MARU

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SHINKAI 6500
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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

MIRAI MR08-03 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: **MR08-03**

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 > 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.



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

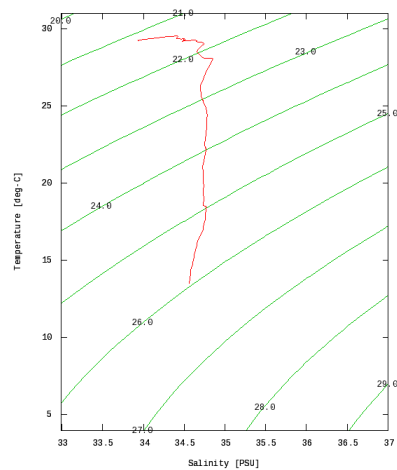
Imagery reproduced from ...

Figures

C01M01



MR08-03: C01M01
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

<input type="checkbox"/>	C01M01.dat
<input type="checkbox"/>	C01M02.dat
<input type="checkbox"/>	C01M03.dat
<input type="checkbox"/>	C01M04.dat
<input type="checkbox"/>	C02M01.dat
<input type="checkbox"/>	C03M01.dat
<input type="checkbox"/>	C04M01.dat
<input type="checkbox"/>	C04M02.dat
<input type="checkbox"/>	C05M01.dat
<input type="checkbox"/>	C06M01.dat
<input type="checkbox"/>	C07M01.dat
<input type="checkbox"/>	C07M02.dat
<input type="checkbox"/>	C07M03.dat

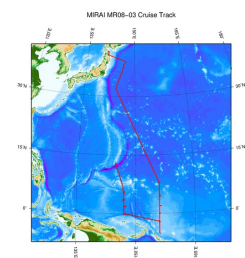
File Name
C08M01.dat
C09M01.dat
C09M02.dat
C10M01.dat
C11M01.dat
C11M02.dat
C11M03.dat
C11M04.dat
C12M01.dat
C12M02.dat
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C12M05.dat
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C14M01.dat
C15M01.dat
C15M02.dat
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C32M04.dat
C33M01.dat
C34M01.dat
C34M02.dat
C34M03.dat
C34M04.dat
C34M05.dat
C34M06.dat
ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
C01M01	2008-07-04 19:50	5.0320	146.9653
C01M02	2008-07-05 02:50	5.0313	146.9656
C01M03	2008-07-05 04:05	4.9791	147.0225
C01M04	2008-07-05 07:50	5.0323	146.9650
C02M01	2008-07-06 03:20	4.5214	146.9981
C03M01	2008-07-06 06:06	4.0051	146.9998
C04M01	2008-07-06 08:53	3.5165	147.0010
C04M02	2008-07-06 19:50	3.4981	147.0010
C05M01	2008-07-06 22:43	3.0021	147.0013
C06M01	2008-07-07 01:40	2.5021	147.0028
C07M01	2008-07-07 19:50	2.0050	147.0056
C07M02	2008-07-08 02:52	2.0078	147.0043

Observation	Time and Date	Lat [°]	Long [°]
C07M04	2008-07-08 07:50	2.0040	147.0065
C08M01	2008-07-07 07:08	1.5035	147.0068
C09M01	2008-07-09 05:45	1.0016	146.9998
C09M02	2008-07-09 06:28	1.0001	146.9985
C10M01	2008-07-09 09:07	0.4991	146.9991
C11M01	2008-07-10 02:56	0.0433	146.9810
C11M02	2008-07-10 19:52	-0.0041	147.0423
C11M03	2008-07-11 02:50	-0.0050	147.0440
C11M04	2008-07-11 07:50	-0.0056	147.0396
C12M01	2008-07-15 18:51	-4.9985	155.9993
C12M02	2008-07-15 23:23	-4.9685	156.0073
C12M03	2008-07-16 01:50	-4.9985	156.0008
C12M04	2008-07-16 03:10	-5.0425	156.0046
C12M05	2008-07-16 06:51	-4.9983	156.0100
C13M01	2008-07-17 01:59	-4.5018	155.9998
C14M01	2008-07-17 04:45	-4.0178	155.9996
C15M01	2008-07-15 07:34	-3.4956	155.9995
C15M02	2008-07-15 08:06	-3.4986	156.0008
C16M01	2008-07-15 04:54	-2.9976	155.9995
C17M01	2008-07-15 02:15	-2.4993	155.9996
C18M01	2008-07-13 18:51	-1.9721	155.9843
C18M02	2008-07-13 23:34	-1.9910	156.0200
C18M03	2008-07-14 01:50	-1.9720	155.9826
C18M04	2008-07-14 03:35	-1.9383	155.8126
C18M05	2008-07-14 06:51	-1.9730	155.9831
C18M06	2008-07-17 18:53	-1.9728	155.9840
C18M07	2008-07-17 21:50	-1.9740	155.9836
C18M08	2008-07-18 00:53	-1.9740	155.9821
C18M09	2008-07-18 03:54	-1.9741	155.9833
C18M10	2008-07-18 06:50	-1.9768	155.9840
C18M11	2008-07-18 09:51	-1.9750	155.9853
C18M12	2008-07-18 12:50	-1.9746	155.9826
C18M13	2008-07-18 15:51	-1.9748	155.9830
C19M01	2008-07-18 18:50	-1.4993	155.9991
C20M01	2008-07-18 21:50	-1.0001	156.0000
C20M02	2008-07-18 22:37	-0.9986	155.9988
C21M01	2008-07-19 01:54	-0.4995	155.9996
C22M01	2008-07-19 04:50	0.0066	156.0238
C22M02	2008-07-19 18:50	-0.0161	156.0000
C22M04	2008-07-19 23:50	-0.0055	155.9703
C22M05	2008-07-20 06:50	-0.0093	155.9828
C23M01	2008-07-19 07:51	0.5005	155.9995
C24M01	2008-07-21 04:07	0.9870	155.9995
C24M02	2008-07-21 04:50	1.0025	155.9955
C25M01	2008-07-21 07:38	1.4980	155.9998
C26M01	2008-07-21 18:50	1.9835	155.9996
C26M02	2008-07-22 00:03	1.9698	155.9980
C26M03	2008-07-22 01:50	1.9838	156.0006
C26M04	2008-07-22 03:06	2.0425	156.0218
C26M05	2008-07-22 06:50	1.9840	156.0018
C27M01	2008-07-23 03:28	2.5071	156.0000
C28M01	2008-07-23 05:56	2.9985	155.9996
C29M02	2008-07-23 08:27	3.4898	155.9993
C30M01	2008-07-24 07:39	4.0083	156.0000
C31M01	2008-07-24 04:56	4.5066	156.0003
C32M01	2008-07-24 01:58	5.0111	155.9996
C32M02	2008-07-24 18:50	5.0223	155.9560
C32M03	2008-07-25 01:52	5.0223	155.9553
C32M04	2008-07-25 07:03	5.0240	155.9590
C33M01	2008-07-25 18:22	6.5020	156.0001
C34M01	2008-07-26 06:55	7.9713	156.0081
C34M02	2008-07-26 18:50	7.9556	156.0135
C34M03	2008-07-27 01:50	7.9570	156.0135
C34M04	2008-07-27 02:54	7.9586	156.0068
C34M05	2008-07-27 04:04	7.9643	156.0093
C34M06	2008-07-27 07:18	7.9551	156.0050

Related Information



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MR08-03

Ship Name: MIRAI
Period: 2008-07-02 - 2008-08-06
Chief Scientist: Yuji Kashino (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS), Station KEO]
Proposal Tropical Ocean Climate Study
Title:

Update History

2017-06-22	An observation data was registerd.
2014-07-31	An observation data was registerd.
2014-02-15	An observation data was registerd.
2014-02-13	An observation data was registerd.
2013-03-26	An observation data was registerd.
2012-10-27	An observation data was registerd.

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Data

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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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