

MIRAI MR11-06 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR11-06](#)

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/MR11-06_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.

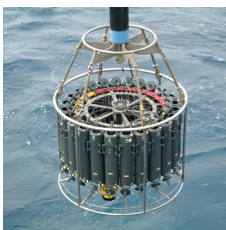
Data Citation

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

Instrument

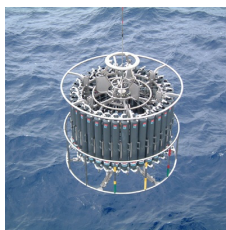
Instrument:

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



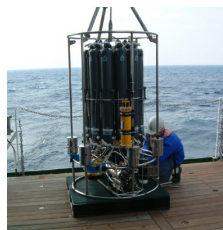
Instrument:

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



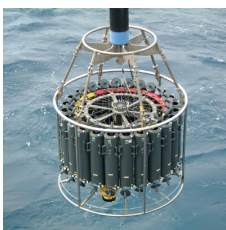
Instrument:

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 MR11-06 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR11-06.

SEASAVE(ver 7.20g) for data acquisition

SEASOFT(ver 7.18d) 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 : 032453

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

· Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 041172

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 : 430205
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	032453	041172	430205
C02M01	79511	032453	041172	430205
C03M01	79511	032453	041172	430205
C04M01	79511	032453	041172	430205
C05M01	79511	032453	041172	430205
C06M01	79511	032453	041172	430205
C07M01	79511	032453	041172	430205
C08M01	79511	032453	041172	430205
C09M01	79511	032453	041172	430205
C10M01	79511	032453	041172	430205
C11M01	79511	032453	041172	430205
C12M01	79511	032453	041172	430205
C13M01	79511	032453	041172	430205
C14M01	79511	032453	041172	430205
C15M01	79511	032453	041172	430205
C16M01	79511	032453	041172	430205
C17M01	79511	032453	041172	430205
C18M01	79511	032453	041172	430205
C19M01	79511	032453	041172	430205
C20M01	79511	032453	041172	430205
C21M01	79511	032453	041172	430205
C22M01	79511	032453	041172	430205
C23M01	79511	032453	041172	430205
C24M01	79511	032453	041172	430205
C25M01	79511	032453	041172	430205
C26M01	79511	032453	041172	430205
C27M01	79511	032453	041172	430205
C28M01	79511	032453	041172	430205
C29M01	79511	032453	041172	430205
C30M01	79511	032453	041172	430205
C31M01	79511	032453	041172	430205
C32M01	79511	032453	041172	430205
C33M01	79511	032453	041172	430205
C34M01	79511	032453	041172	430205
C35M01	79511	032453	041172	430205
C36M01	79511	032453	041172	430205
C37M01	79511	032453	041172	430205
C38M01	79511	032453	041172	430205
C39M01	79511	032453	041172	430205
C40M01	79511	032453	041172	430205
C41M01	79511	032453	041172	430205
C42M01	79511	032453	041172	430205
C43M01	79511	032453	041172	430205
C44M01	79511	032453	041172	430205
C45M01	79511	032453	041172	430205
C46M01	79511	032453	041172	430205
C47M01	79511	032453	041172	430205
C48M01	79511	032453	041172	430205
C49M01	79511	032453	041172	430205
C50M01	79511	032453	041172	430205
C51M01	79511	032453	041172	430205

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.
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.

command	function
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.

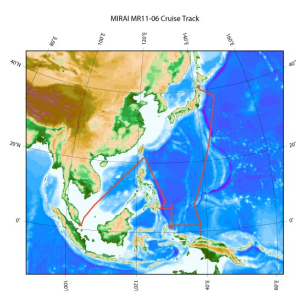
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (transmittance) 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](#)

MR11-06

Ship Name: MIRAI
 Period: 2011-08-13 - 2011-09-20
 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.
2016-04-07	An observation data was registerd.
2014-08-08	An observation data was registerd.
2014-02-20	An observation data was registerd.
2013-09-26	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 to a Dive Information

Dive ID:

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 MR11-06 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR11-06](#)

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

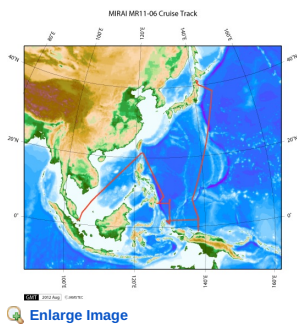
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR11-06

Ship Name: MIRAI

Period: 2011-08-13 - 2011-09-20

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.
2016-04-07	An observation data was registerd.
2014-08-08	An observation data was registerd.
2014-02-20	An observation data was registerd.
2013-09-26	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 to a Dive Information

Dive ID:

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 MR11-06 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: **MR11-06**

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

Data Policy: **JAMSTEC**

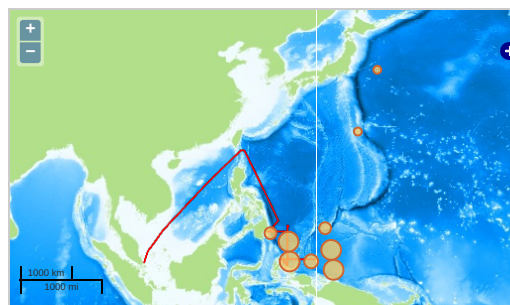
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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

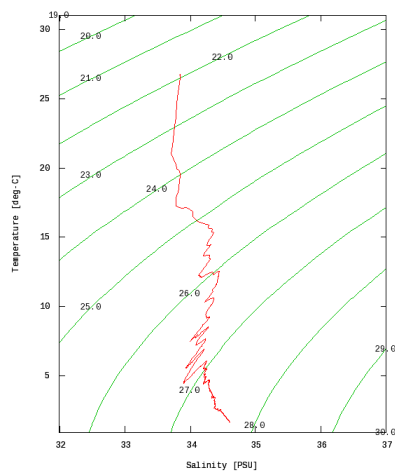
Imagery reproduced from ...

Figures

C01M01



MR11-06: 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"/>	C02M01.dat
<input type="checkbox"/>	C03M01.dat
<input type="checkbox"/>	C04M01.dat
<input type="checkbox"/>	C05M01.dat
<input type="checkbox"/>	C06M01.dat
<input type="checkbox"/>	C07M01.dat
<input type="checkbox"/>	C08M01.dat
<input type="checkbox"/>	C09M01.dat
<input type="checkbox"/>	C10M01.dat
<input type="checkbox"/>	C11M01.dat
<input type="checkbox"/>	C12M01.dat
<input type="checkbox"/>	C13M01.dat

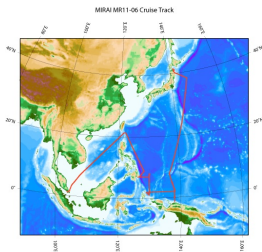
	File Manager
	C15M01.dat
	C16M01.dat
	C17M01.dat
	C18M01.dat
	C19M01.dat
	C20M01.dat
	C21M01.dat
	C22M01.dat
	C23M01.dat
	C24M01.dat
	C25M01.dat
	C26M01.dat
	C27M01.dat
	C28M01.dat
	C29M01.dat
	C30M01.dat
	C31M01.dat
	C32M01.dat
	C33M01.dat
	C34M01.dat
	C35M01.dat
	C36M01.dat
	C37M01.dat
	C38M01.dat
	C39M01.dat
	C40M01.dat
	C41M01.dat
	C42M01.dat
	C43M01.dat
	C44M01.dat
	C45M01.dat
	C46M01.dat
	C47M01.dat
	C48M01.dat
	C49M01.dat
	C50M01.dat
	C51M01.dat
	ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
C01M01	2011-08-16 15:13	36.0131	145.7571
C02M01	2011-08-18 23:52	25.0436	142.3108
C03M01	2011-08-22 20:25	7.8821	136.4976
C04M01	2011-08-25 20:19	4.9658	137.3673
C05M01	2011-08-25 04:09	4.5233	137.4078
C06M01	2011-08-25 07:50	4.0325	137.5710
C07M01	2011-08-26 09:47	3.5108	137.7430
C08M01	2011-08-27 08:20	2.9855	137.9240
C09M01	2011-08-27 04:41	2.4885	138.0811
C10M01	2011-08-26 20:24	2.0133	138.1065
C11M01	2011-08-28 05:40	1.5175	138.0013
C12M01	2011-08-28 09:22	1.0076	137.9980
C13M01	2011-08-29 08:18	0.4878	138.0013
C14M01	2011-08-30 02:20	0.0694	138.0206
C15M01	2011-08-29 02:23	-0.5288	138.0055
C16M01	2011-08-28 23:00	-1.0058	138.0053
C17M01	2011-08-28 20:25	-1.2488	138.0029
C18M01	2011-08-30 20:25	2.0000	136.9998
C19M01	2011-08-31 01:53	2.0015	136.0028
C20M01	2011-08-31 07:17	2.0005	135.0096
C21M01	2011-08-31 12:38	2.0006	134.0175
C22M01	2011-08-31 18:21	2.0003	133.0025
C23M01	2011-08-31 23:34	2.0006	132.0241
C24M01	2011-09-01 05:10	2.0010	131.0053
C25M01	2011-09-01 09:51	1.9738	130.1975
C26M01	2011-09-01 20:26	1.9995	128.9998
C27M01	2011-09-02 03:30	1.0083	129.9946
C28M01	2011-09-02 07:19	1.4760	130.0006
C29M01	2011-09-03 04:41	2.4966	130.0016
C30M01	2011-09-04 06:48	2.9951	130.0023
C31M01	2011-09-04 20:20	3.4973	129.9978
C32M01	2011-09-05 00:16	3.9923	130.0001
C33M01	2011-09-05 04:25	4.4893	130.0013
C34M01	2011-09-05 08:29	4.9808	130.0010
C35M01	2011-09-05 20:21	5.4996	129.9991
C36M01	2011-09-06 00:31	5.9920	129.9980
C37M01	2011-09-06 04:45	6.4915	129.9960
C38M01	2011-09-06 08:06	6.9981	129.9961
C39M01	2011-09-07 06:46	7.5186	130.0018
C40M01	2011-09-07 03:56	7.9061	130.0660

Observation	Time and Date	Lat	Long
C42M01	2011-09-08 20:54	7.0001	128.9993
C43M01	2011-09-09 00:23	7.0016	128.5060
C44M01	2011-09-09 03:46	6.9996	128.0070
C45M01	2011-09-09 06:04	7.0006	127.7661
C46M01	2011-09-09 08:21	7.0000	127.5136
C47M01	2011-09-10 04:26	7.0003	127.2645
C48M01	2011-09-10 06:41	7.0008	127.0106
C49M01	2011-09-11 08:04	6.9983	126.7971
C50M01	2011-09-11 05:45	7.0006	126.5966
C51M01	2011-09-11 03:54	6.9998	126.5015

Related Information



[Enlarge Image](#)

MR11-06

Ship Name: MIRAI
Period: 2011-08-13 - 2011-09-20
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.
2016-04-07	An observation data was registered.
2014-08-08	An observation data was registered.
2014-02-20	An observation data was registered.
2013-09-26	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: