

## MIRAI MR04-04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-08-24

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Cruise ID: [MR04-04](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (PI)

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

### For Using Data

#### Principal Investigator

Shuichi Watanabe (JAMSTEC)

#### Use Constraints

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

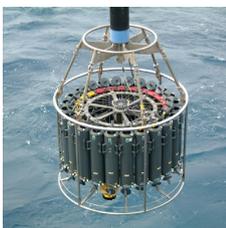
#### Data Citation

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

### Instrument

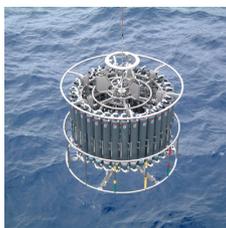
Instrument:

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



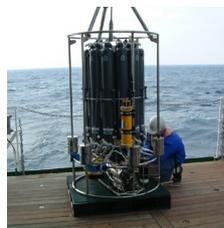
Instrument:

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 MR04-04 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR04-04.

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 : 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 : 042240

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

#### Note

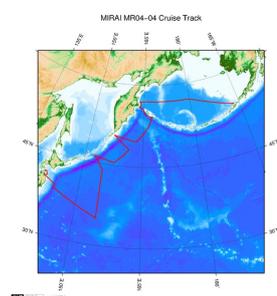
(1) Data processing sequence for SEASOFT is as follows;

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.
derive	Calculate salinity, density, etc..
split	Split data in file into upcast and downcast files.

(2) The time and position presented in the header is at the starting time of cast.

(3) In this cruise, there is extra data (fluorescence intensity, transmittance, 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](#)

#### MR04-04

Ship Name: MIRAI  
Period: 2004-08-07 - 2004-08-30  
Chief Scientist: Shuichi Watanabe (JAMSTEC)  
Project Name: [Station K2, Station KNOT]

#### Update History

2017-08-24	An observation data was registerd.
2014-07-24	An observation data was registerd.
2013-03-27	An observation data was registerd.
2012-11-25	An observation data was registerd.

#### JAMSTEC

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YOKOSUKA  
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KAIREI  
CHIKYU  
KAIMEI  
SHINSEI MARU  
HAKUHO MARU

#### Information of the Submersibles

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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

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Dive ID:



## MIRAI MR04-04 Conductivity-Temperature-Depth Profiler (CTD)

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Cruise ID: [MR04-04](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (PI)

Data Policy: [JAMSTEC](#)

### CTD WOCE-type1

#### Format Description for the Processed (PI) 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	MRYX-(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

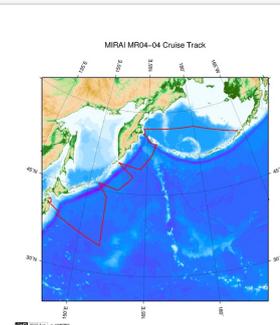
Data part

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 : <a href="#">Definition of Quality Control Flags</a>
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'.

### Related Information



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#### MR04-04

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Chief Scientist: Shuichi Watanabe (JAMSTEC)

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Dive ID:

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

**MIRAI MR04-04 Conductivity-Temperature-Depth Profiler (CTD)**

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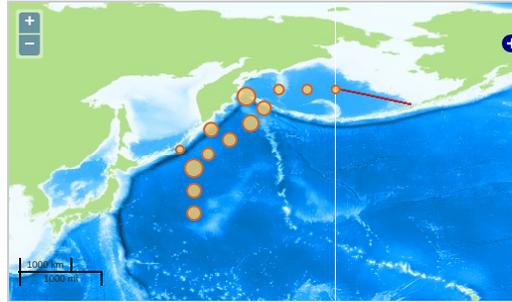
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 Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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 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.



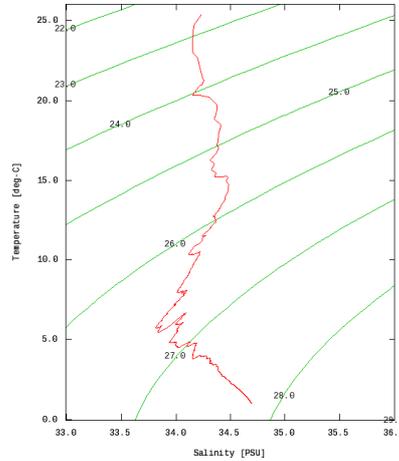
— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole Imagery reproduced from ...

**Figures**

P00101



MR04-04:P00101  
 Conductivity-Temperature-Depth Profiler (CTD):Salinity



**Data List**

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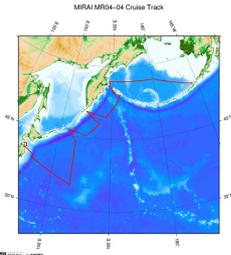
<input type="checkbox"/>	File names
<input type="checkbox"/>	P00101.csv
<input type="checkbox"/>	P00201.csv
<input type="checkbox"/>	P00301.csv
<input type="checkbox"/>	P00401.csv
<input type="checkbox"/>	P00501.csv
<input type="checkbox"/>	P00601.csv
<input type="checkbox"/>	P00701.csv
<input type="checkbox"/>	P00801.csv
<input type="checkbox"/>	P00901.csv
<input type="checkbox"/>	P01001.csv
<input type="checkbox"/>	P01002.csv
<input type="checkbox"/>	P01101.csv
<input type="checkbox"/>	P01201.csv

File Names
P01401.csv
P01501.csv
P01601.csv
P01602.csv
P01701.csv
P01801.csv
P01901.csv
P02001.csv
P02101.csv
P02201.csv
P02301.csv
P02401.csv
P02402.csv
P02501.csv
P02601.csv
P02701.csv
P02801.csv
P02901.csv
P03001.csv
P03101.csv
P03201.csv
P03301.csv
P03501.csv
P03601.csv
P03701.csv
P03801.csv
P03901.csv
P04001.csv
P04101.csv
PX1101.csv
PX1201.csv
PX3401.csv

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

Observation	Time and Date	Lat. [°]	Lon. [°]
P00101	2004-08-10 00:00	35.0018	155.0003
P00201	2004-08-10 00:00	35.9868	155.0002
P00301	2004-08-11 00:00	36.9872	154.9977
P00401	2004-08-11 00:00	37.9955	154.9982
P00501	2004-08-11 00:00	38.9960	155.0020
P00601	2004-08-12 00:00	39.9917	155.0008
P00701	2004-08-12 00:00	40.9915	155.0032
P00801	2004-08-13 00:00	41.9925	155.0020
P00901	2004-08-13 00:00	42.9985	154.9547
P01001	2004-08-13 00:00	44.0002	154.9990
P01002	2004-08-13 00:00	44.0002	155.0010
P01101	2004-08-14 00:00	44.6147	154.3378
P01201	2004-08-15 00:00	45.2523	153.6615
P01301	2004-08-15 00:00	45.8667	152.9997
P01401	2004-08-15 00:00	46.3208	152.5135
P01501	2004-08-16 00:00	45.5075	157.4810
P01601	2004-08-16 00:00	47.0000	159.9973
P01602	2004-08-16 00:00	46.9967	159.9995
P01701	2004-08-17 00:00	48.0548	161.2843
P01801	2004-08-17 00:00	48.8338	160.0007
P01901	2004-08-18 00:00	49.4933	158.7663
P02001	2004-08-18 00:00	49.8713	158.0238
P02101	2004-08-18 00:00	50.2840	157.5163
P02201	2004-08-18 00:00	50.4982	156.9180
P02301	2004-08-19 00:00	49.5642	163.1742
P02401	2004-08-20 00:00	51.0022	165.0015
P02402	2004-08-20 00:00	50.9997	164.9982
P02501	2004-08-21 00:00	51.9890	166.1532
P02601	2004-08-21 00:00	52.8185	166.8190
P02701	2004-08-21 00:00	53.6652	167.3328
P02801	2004-08-22 00:00	54.1660	167.6652
P02901	2004-08-23 00:00	55.5477	164.8717
P03001	2004-08-23 00:00	55.6640	164.5533
P03101	2004-08-23 00:00	55.7668	164.2480
P03201	2004-08-23 00:00	55.8833	163.9152
P03301	2004-08-24 00:00	55.9975	163.5548
P03501	2004-08-25 00:00	56.9988	164.9937
P03601	2004-08-25 00:00	57.0003	167.4682
P03701	2004-08-25 00:00	56.9992	169.9755
P03801	2004-08-26 00:00	57.0010	172.4980
P03901	2004-08-26 00:00	56.9992	174.9625
P04001	2004-08-26 00:00	56.9997	177.4988
P04101	2004-08-27 00:00	57.0018	179.9983
PX1101	2004-08-18 00:00	50.3915	157.2163
PX1201	2004-08-20 00:00	50.2668	164.0647
PX3401	2004-08-24 00:00	56.9507	164.1643

### Related Information



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