

MIRAI MR02-K03 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR02-K03](#)

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

For Using Data

Principal Investigator

Data Management Office

Use Constraints

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

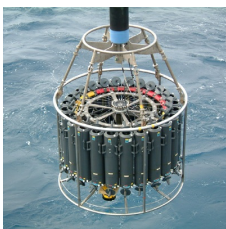
Data Citation

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

Instrument

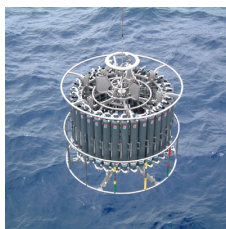
Instrument:

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



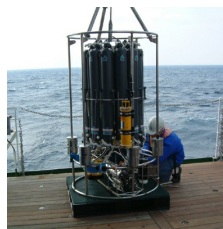
Instrument:

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



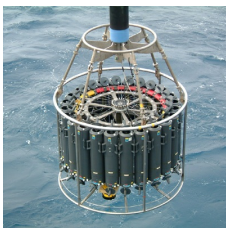
Instrument:

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 MR02-K03 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR02-K03.

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 : 041203

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
001m01	79492	031464	041203	430205
002m01	79492	031464	041203	430205
p11m01	79492	031464	041203	430205
p12m01	79492	031464	041203	430205
p16m01	79492	031464	041203	430205
p15m01	79492	031464	041203	430205
p14m01	79492	031464	041203	430205
p13m01	79492	031464	041203	430205
p08m01	79492	031464	041203	430205
p07m01	79492	031464	041203	430205
p06m01	79492	031464	041203	430205
p01m01	79492	031464	041203	430205
p02m01	79492	031464	041203	430205
p03m01	79492	031464	041203	430205
os1m01	79492	031464	041203	430205
os2m01	79492	031464	041203	430205
os3m01	79492	031464	041203	430205
os4m01	79492	031464	041203	430205
os5m01	79492	031464	041203	430205
os6m01	79492	031464	041203	430205
ae8m01	79492	031464	041203	430205
ae7m01	79492	031464	041203	430205
ae6m01	79492	031464	041203	430205
ae5m01	79492	031464	041203	430205
ae4m01	79492	031464	041203	430205
ae3m01	79492	031464	041203	430205
ae2m01	79492	031464	041203	430205
ae1m01	79492	031464	041203	430205
201m01	79492	031464	041203	430205
203m01	79492	031464	041203	430205
204m01	79492	031464	041203	430205
205m01	79492	031464	041203	430205
207m01	79492	031464	041203	430205
208m01	79492	031464	041203	430205
208m02	79492	031464	041203	430205
209m01	79492	031464	041203	430205
210m01	79492	031464	041203	430205
211m01	79492	031464	041203	430205
210m02	79492	031464	041203	430205
211m02	79492	031464	041203	430205
212m01	79492	031464	041203	430205
212m02	79492	031464	041203	430205
213m01	79492	031464	041203	430205
214m01	79492	031464	041203	430205
214m02	79492	031464	041203	430205
215m01	79492	031464	041203	430205
216m01	79492	031464	041203	430205
216m02	79492	031464	041203	430205
217m01	79492	031464	041203	430205
218m01	79492	031464	041203	430205
218m02	79492	031464	041203	430205
219m01	79492	031464	041203	430205
220m01	79492	031464	041203	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.
section	Extract rows of data from 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.
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
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.

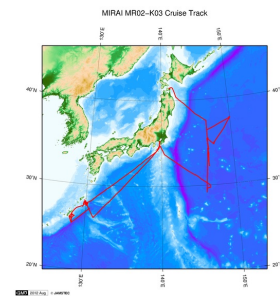
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (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](#)

MR02-K03

Ship Name: MIRAI
Period: 2002-05-26 - 2002-06-21
Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

Update History

2017-06-22	An observation data was registered.
2014-07-18	An observation data was registered.
2014-02-06	An observation data was registered.
2014-02-05	An observation data was registered.
2013-03-27	An observation data was registered.
2012-12-25	An observation data was registered.

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MIRAI MR02-K03 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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 Cruise ID: [MR02-K03](#)

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

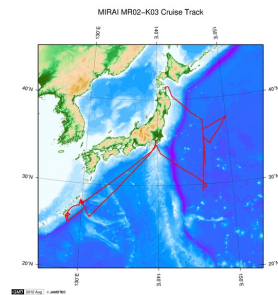
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



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MR02-K03

Ship Name: MIRAI

Period: 2002-05-26 - 2002-06-21

Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

Update History

2017-06-22	An observation data was registerd.
2014-07-18	An observation data was registerd.
2014-02-06	An observation data was registerd.
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Last Modified: 2017-06-22

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Cruise ID: **MR02-K03**

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

Data Policy: **JAMSTEC**

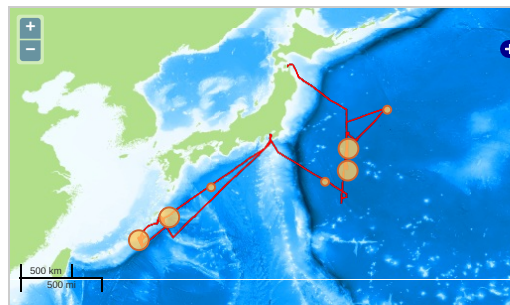
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

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

Observation Map

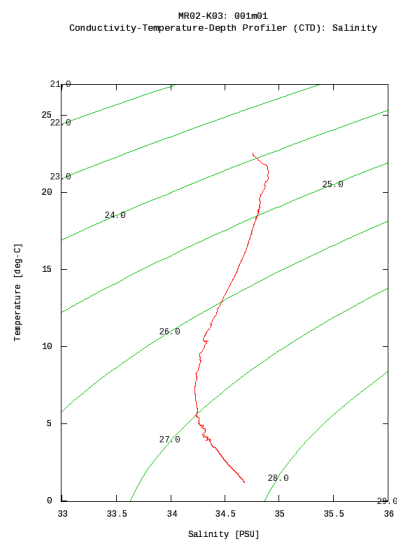
1. Clicking the icon displays a balloon with observation information.
2. Then click the observation name, figures will be displayed.



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

Figures

001m01



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"/>	001m01.dat
<input type="checkbox"/>	002m01.dat
<input type="checkbox"/>	201m01.dat
<input type="checkbox"/>	203m01.dat
<input type="checkbox"/>	204m01.dat
<input type="checkbox"/>	205m01.dat
<input type="checkbox"/>	207m01.dat
<input type="checkbox"/>	208m01.dat
<input type="checkbox"/>	208m02.dat
<input type="checkbox"/>	209m01.dat
<input type="checkbox"/>	210m01.dat
<input type="checkbox"/>	210m02.dat
<input type="checkbox"/>	211m01.dat

 212m02.dat
 212m01.dat
 213m01.dat
 214m01.dat
 214m02.dat
 215m01.dat
 216m01.dat
 216m02.dat
 217m01.dat
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 p07m01.dat
 p08m01.dat
 p11m01.dat
 p12m01.dat
 p13m01.dat
 p14m01.dat
 p15m01.dat
 p16m01.dat
 ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
001m01	2002-05-27 04:03	30.7755	134.3779
002m01	2002-05-28 04:11	28.1088	130.6593
201m01	2002-06-08 01:58	31.2648	144.4915
203m01	2002-06-10 03:13	34.2036	146.5686
204m01	2002-06-11 01:52	35.4218	146.4856
205m01	2002-06-13 06:53	37.6614	150.0120
207m01	2002-06-14 23:05	32.2518	146.5021
208m01	2002-06-15 04:10	32.5000	146.5016
208m02	2002-06-15 08:16	32.4880	146.5130
209m01	2002-06-15 11:07	32.7503	146.4985
210m01	2002-06-15 15:58	32.9996	146.5015
210m02	2002-06-16 02:32	33.0005	146.5001
211m01	2002-06-15 21:42	33.2493	146.5031
211m02	2002-06-16 04:25	33.2501	146.5010
212m01	2002-06-16 06:40	33.4975	146.5029
212m02	2002-06-16 10:15	33.4675	146.5486
213m01	2002-06-16 12:16	33.7456	146.5038
214m01	2002-06-16 18:00	33.9963	146.5029
214m02	2002-06-16 22:29	33.9993	146.5021
215m01	2002-06-17 01:18	34.2451	146.5023
216m01	2002-06-17 06:25	34.4946	146.5001
216m02	2002-06-17 10:25	34.5000	146.5006
217m01	2002-06-17 12:58	34.7475	146.4998
218m01	2002-06-17 18:08	34.9981	146.5018
218m02	2002-06-17 21:42	34.9981	146.5015
219m01	2002-06-18 00:15	35.2455	146.5003
220m01	2002-06-18 05:03	35.4990	146.5004
ae1m01	2002-06-03 21:45	28.1338	129.8258
ae2m01	2002-06-03 19:55	28.0160	129.9088
ae3m01	2002-06-03 17:25	27.8348	130.0003
ae4m01	2002-06-03 14:55	27.6941	130.0880
ae5m01	2002-06-03 11:26	27.5560	130.1731
ae6m01	2002-06-03 07:39	27.4150	130.2581
ae7m01	2002-06-03 02:26	27.2775	130.3466
ae8m01	2002-06-02 21:48	27.1336	130.4416
os1m01	2002-06-01 14:24	26.0768	127.9571
os2m01	2002-06-01 15:31	26.0183	128.0023
os3m01	2002-06-01 18:08	25.8796	128.0560

Observation	Time and Date	Lat [°N]	Long [°E]
os5m01	2002-06-01 23:59	25.5500	128.2070
os6m01	2002-06-02 04:25	25.3785	128.2851
p01m01	2002-05-31 23:28	26.1228	128.0183
p02m01	2002-06-01 02:13	26.0243	128.1353
p03m01	2002-06-01 06:27	25.8848	128.2763
p06m01	2002-05-31 10:52	26.4310	128.2406
p07m01	2002-05-31 08:54	26.2951	128.3595
p08m01	2002-05-31 05:23	26.2175	128.5714
p11m01	2002-05-29 08:10	27.9726	129.8700
p12m01	2002-05-29 10:48	27.8808	129.7756
p13m01	2002-05-30 00:04	27.6678	129.7233
p14m01	2002-05-29 19:37	27.5961	130.0578
p15m01	2002-05-29 15:57	27.6681	130.1365
p16m01	2002-05-29 13:31	27.7886	130.1578

Related Information

MIRAI-MR02-K03 Cruise Track

MR02-K03
Ship Name: MIRAI
Period: 2002-05-26 - 2002-06-21
Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

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Update History

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