

MIRAI MR01-K04 Leg2 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR01-K04 Leg2](#)

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/MR01-K04_leg2_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)



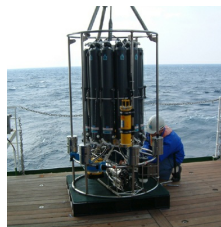
Instrument:

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 MR01-K04 Leg2 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR01-K04 Leg2.

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 : 42423

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 : 031359

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 041202

Measurement range : 0.0 to 7 S/m

Accuracy : 0.0003 S/m

Resolution : 0.00004 S/m

- DO sensor

Model : SBE13, Sea-Bird Electronics, Inc.
Serial number : 130540
Measurement range : 0 to 15ml/l
Accuracy : 0.1ml/l
Resolution : 0.01ml/l

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
000S01	42423	031359	041202	130540
001S01	42423	031359	041202	130540
001S02	42423	031359	041202	130540
002S01	42423	031359	041202	130540
003S01	42423	031359	041202	130540
003S02	42423	031359	041202	130540
004S01	42423	031359	041202	130540
004S02	42423	031359	041202	130540
005S01	42423	031359	041202	130540
005S02	42423	031359	041202	130540
005S03	42423	031359	041202	130540
006S01	42423	031359	041202	130540
006S02	42423	031359	041202	130540
007S01	42423	031359	041202	130540
007S02	42423	031359	041202	130540
008S01	42423	031359	041202	130540
009S01	42423	031359	041202	130540
009S02	42423	031359	041202	130540
K01S01	42423	031359	041202	130540
K01S02	42423	031359	041202	130540
K01S03	42423	031359	041202	130540
K02S01	42423	031359	041202	130540
K02S02	42423	031359	041202	130540
K02S03	42423	031359	041202	130540
K02S04	42423	031359	041202	130540

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.
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.

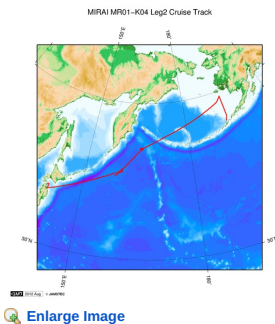
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 additional to temperature, salinity, dissolved oxygen that has been opened to the public. Please contact us from "Contact Us" above if necessary.

Related Information



MR01-K04 Leg2
 Ship Name: MIRAI
 Period: 2001-08-28 - 2001-09-14
 Chief Scientist: Susumu Honjo (JAMSTEC)
 Project Name: [Station K2]

Update History

2017-06-22	An observation data was registerd.
2014-07-16	An observation data was registerd.
2014-02-06	An observation data was registerd.
2014-02-05	An observation data was registerd.
2012-12-25	An observation data was registerd.

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 6K Sonar DEEP TOW
 KM-ROV
 POWER GRAB SAMPLER (SHELL)
 POWER GRAB SAMPLER (CLOW)
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Dive ID:

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MIRAI MR01-K04 Leg2 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR01-K04 Leg2](#)

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

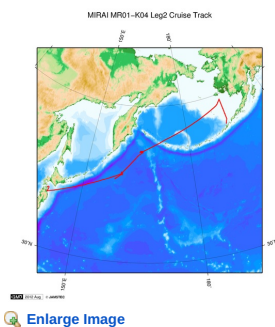
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR01-K04 Leg2
 Ship Name: MIRAI
 Period: 2001-08-28 - 2001-09-14
 Chief Scientist: Susumu Honjo (JAMSTEC)
 Project Name: [Station K2]

Update History

2017-06-22	An observation data was registerd.
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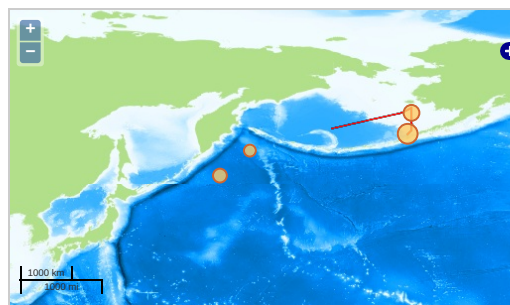
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.



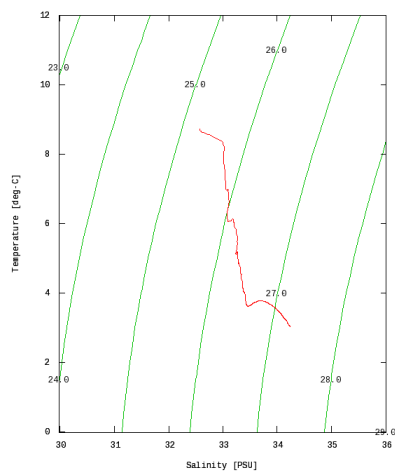
— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Figures

000S01



MR01-K04 Leg2: 000S01
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"/>	000S01.dat
<input type="checkbox"/>	001S01.dat
<input type="checkbox"/>	001S02.dat
<input type="checkbox"/>	002S01.dat
<input type="checkbox"/>	003S01.dat
<input type="checkbox"/>	003S02.dat
<input type="checkbox"/>	004S01.dat
<input type="checkbox"/>	004S02.dat
<input type="checkbox"/>	005S01.dat
<input type="checkbox"/>	005S02.dat
<input type="checkbox"/>	005S03.dat
<input type="checkbox"/>	006S01.dat
<input type="checkbox"/>	006S02.dat

File Names

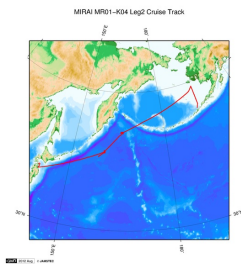
007S02.dat
008S01.dat
009S01.dat
009S02.dat
K01S01.dat
K01S02.dat
K01S03.dat
K02S01.dat
K02S02.dat
K02S03.dat
K02S04.dat
ex_read2.f (Sample Program)

● Observation List

The list of observation is shown as follows.

Observation	Time and Date	Lat. [°]	Lon. [°]
000S01	2001-08-28 21:04	54.2876	-166.6793
001S01	2001-08-29 02:04	55.0023	-165.9948
001S02	2001-08-29 04:00	54.9995	-166.0001
002S01	2001-08-29 09:09	55.4996	-165.9993
003S01	2001-08-29 17:14	55.9991	-166.0018
003S02	2001-08-29 18:37	55.9980	-166.0015
004S01	2001-08-30 01:22	56.4996	-165.9960
004S02	2001-08-30 03:09	56.5001	-166.0006
005S01	2001-08-30 16:15	56.9995	-166.0004
005S02	2001-08-30 17:57	56.9996	-166.0011
005S03	2001-08-30 18:17	56.9981	-166.0048
006S01	2001-08-30 21:11	57.4978	-166.0025
006S02	2001-08-30 22:43	57.4998	-166.0065
007S01	2001-08-31 05:16	57.9995	-166.0043
007S02	2001-08-31 06:44	57.9998	-166.0011
008S01	2001-08-31 10:12	58.5001	-166.0000
009S01	2001-08-31 14:11	58.9990	-165.9990
009S02	2001-08-31 15:34	58.9998	-165.9975
K01S01	2001-09-03 22:16	51.2988	165.3013
K01S02	2001-09-04 05:44	51.2991	165.1615
K01S03	2001-09-05 05:47	51.3361	165.2024
K02S01	2001-09-07 19:13	46.8661	159.9813
K02S02	2001-09-08 03:13	46.9363	159.9836
K02S03	2001-09-09 03:21	47.0096	159.9720
K02S04	2001-09-10 11:01	46.8721	159.8646

Related Information



[Enlarge Image](#)

MR01-K04 Leg2

Ship Name: MIRAI
Period: 2001-08-28 - 2001-09-14
Chief Scientist: Susumu Honjo (JAMSTEC)
Project Name: [Station K2]

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