

MIRAI MR01-K02 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR01-K02](#)

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-K02_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)



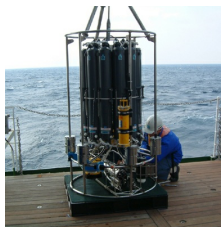
Instrument:

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-K02 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR01-K02.

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.

• 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 : 031359

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

- Resolution : 0.0002degC
- 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
 - 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
 - DO sensor
 - Model : SBE13, Sea-Bird Electronics, Inc.
 - Serial number : 130575
 - 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
043L01	42423	031359	042240	130540
069L01	42423	031359	042240	130540
070L01	42423	031359	042240	130540
071L01	42423	031359	042240	130540
072L01	42423	031359	042240	130540
073L01	42423	031359	042240	130540
074L01	42423	031359	042240	130540
075L01	42423	031359	042240	130540
076L01	42423	031359	042240	130540
077L01	42423	031359	042240	130540
078L01	42423	031359	042240	130540
079L01	42423	031359	042240	130540
080L01	42423	031359	042240	130540
081L01	42423	031359	042240	130540
082L01	42423	031359	042240	130540
083L01	42423	031359	042240	130540
086L01	42423	031359	042240	130540
091S01	42423	031359	042240	130540
092L01	42423	031359	042240	130540
093L01	42423	031359	042240	130540
094L01	42423	031359	042240	130540
095L01	42423	031359	042240	130540
096LO5	79492	031464	041202	130575
097L01	79492	031464	041202	130575
098L01	79492	031464	041202	130575
099L01	79492	031464	041202	130575
100L02	79492	031464	041202	130575
101L01	79492	031464	041202	130575
102L01	79492	031464	041202	130575
103L01	79492	031464	041202	130575

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

derive	Calculate salinity, velocity, etc...
command	function
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.

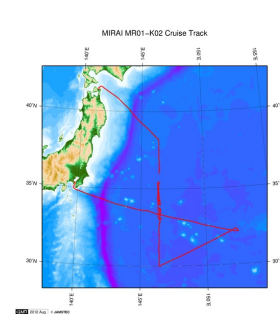
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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, tilt of posture) 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](#)

MR01-K02

Ship Name: MIRAI
Period: 2001-05-13 - 2001-05-28
Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

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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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)
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MIRAI MR01-K02 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR01-K02](#)

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

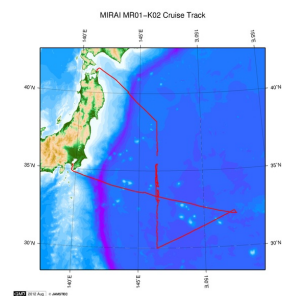
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



 [Enlarge Image](#)

MR01-K02

Ship Name: MIRAI

Period: 2001-05-13 - 2001-05-28

Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

Update History

2017-06-22	An observation data was registerd.
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Last Modified: 2017-06-22

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Cruise ID: **MR01-K02**

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

Data Policy: **JAMSTEC**

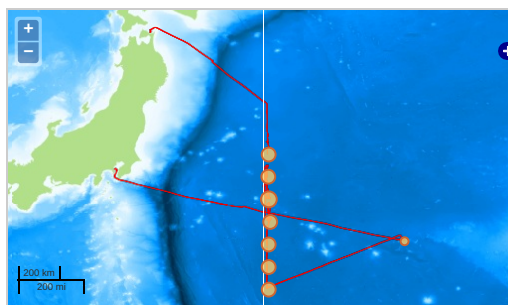
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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

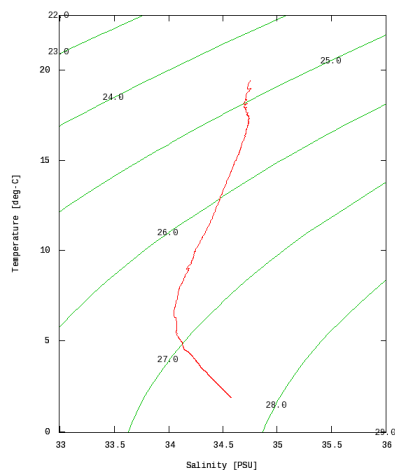
Imagery reproduced from ...

Figures

043L01



MR01-K02: 043L01
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"/>	043L01.dat
<input type="checkbox"/>	069L01.dat
<input type="checkbox"/>	070L01.dat
<input type="checkbox"/>	071L01.dat
<input type="checkbox"/>	072L01.dat
<input type="checkbox"/>	073L01.dat
<input type="checkbox"/>	074L01.dat
<input type="checkbox"/>	075L01.dat
<input type="checkbox"/>	076L01.dat
<input type="checkbox"/>	077L01.dat
<input type="checkbox"/>	078L01.dat
<input type="checkbox"/>	079L01.dat
<input type="checkbox"/>	080L01.dat

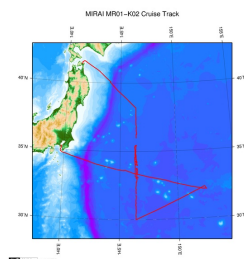
File Names

082L01.dat
083L01.dat
086L01.dat
091S01.dat
092L01.dat
093L01.dat
094L01.dat
095L01.dat
096LO5.dat
097L01.dat
098L01.dat
099L01.dat
100L02.dat
101L01.dat
102L01.dat
103L01.dat
ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
043L01	2001-05-16 01:34	32.1441	152.4483
069L01	2001-05-17 04:37	29.9975	146.4163
070L01	2001-05-17 10:22	30.2441	146.4079
071L01	2001-05-17 15:53	30.5043	146.4166
072L01	2001-05-17 21:48	30.7443	146.4170
073L01	2001-05-18 03:06	31.0000	146.4143
074L01	2001-05-18 08:30	31.2498	146.4139
075L01	2001-05-18 13:25	31.4951	146.4143
076L01	2001-05-18 18:20	31.7533	146.4161
077L01	2001-05-18 23:24	32.0016	146.4145
078L01	2001-05-19 05:05	32.2491	146.4116
079L01	2001-05-19 10:00	32.4973	146.4160
080L01	2001-05-19 14:40	32.7481	146.4170
081L01	2001-05-19 19:35	33.0003	146.4828
082L01	2001-05-20 01:10	33.2490	146.4190
083L01	2001-05-20 07:00	33.5023	146.4378
086L01	2001-05-21 09:40	33.7463	146.4213
091S01	2001-05-23 14:20	34.0043	146.4223
092L01	2001-05-24 02:46	34.0011	146.4163
093L01	2001-05-24 07:30	34.2438	146.4186
094L01	2001-05-24 12:32	34.5005	146.4225
095L01	2001-05-24 17:03	34.7546	146.4150
096LO5	2001-05-25 01:57	35.0101	146.3981
097L01	2001-05-25 07:15	35.2473	146.4166
098L01	2001-05-25 12:35	35.4960	146.4153
099L01	2001-05-25 17:30	35.7515	146.4168
100L02	2001-05-25 22:25	35.9938	146.4145
101L01	2001-05-26 03:01	36.2481	146.4171
102L01	2001-05-26 09:40	36.5000	146.4208
103L01	2001-05-26 14:37	36.7468	146.4205

Related Information



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MR01-K02

Ship Name: MIRAI
Period: 2001-05-13 - 2001-05-28
Chief Scientist: Yasushi Yoshikawa (JAMSTEC)

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HYPER-DOLPHIN
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YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW

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Cruise ID:

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Dive ID:

KM-ROV
POWER GRAB SAMPLER
(SHELL)
POWER GRAB SAMPLER
(CLOW)
BMS

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