

## MIRAI MR00-K08 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR00-K08](#)

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.

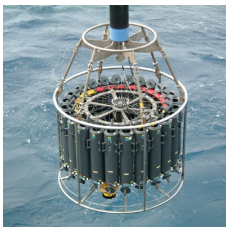
#### Data Citation

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

### Instrument

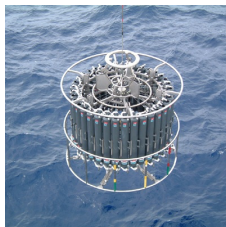
Instrument:

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



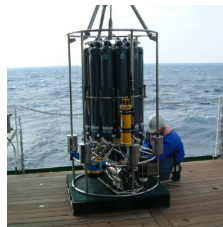
Instrument:

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 MR00-K08 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR00-K08.

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 : 031525

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

#### • Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 041206

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
014L01	42423	031525	041206	130540
014L02	42423	031525	041206	130540
014L03	42423	031525	041206	-
014L04	42423	031525	041206	130540
013L01	42423	031525	041206	130540
012L01	42423	031525	041206	130540
012L02	42423	031525	041206	130540
012L03	42423	031525	041206	130540
012L04	42423	031525	041206	130540
011L01	42423	031525	041206	130540
010L01	42423	031525	041206	130540
009L01	42423	031525	041206	130540
009L02	42423	031525	041206	130540
009L03	42423	031525	041206	130540
009L04	42423	031525	041206	130540
008L01	42423	031525	041206	130540
007L01	42423	031525	041206	-
006L01	42423	031525	041206	130540
006L02	42423	031525	041206	130540
006L03	42423	031525	041206	130540
006L04	42423	031525	041206	130540
005L01	42423	031525	041206	130540
004L01	42423	031525	041206	130540
003L01	42423	031525	041206	130540
003L02	42423	031525	041206	130540
003L03	42423	031525	041206	130540
003L04	42423	031525	041206	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.
alignctd	Align data relative to pressure(typically used for conductivity, temperature, and oxygen).
derive	Calculate salinity, density, etc..
section	Extract rows of data from file.
wildedit	Mark a data value with badflag to eliminate wild points.
binavg	Average data, basing bins on pressure, depth, scan number, or time range.
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.

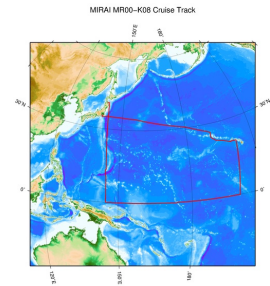
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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, 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



**MR00-K08**  
 Ship Name: MIRAI  
 Period: 2000-12-27 - 2001-02-07  
 Chief Scientist: Takeshi Kawano (JAMSTEC)



Update History	
2017-06-22	An observation data was registerd.
2014-07-12	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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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

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Cruise ID:

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Dive ID:

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**JAMSTEC**  
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

国立研究開発法人  
海洋研究開発機構

## MIRAI MR00-K08 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR00-K08](#)

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 : <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'.

#### 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

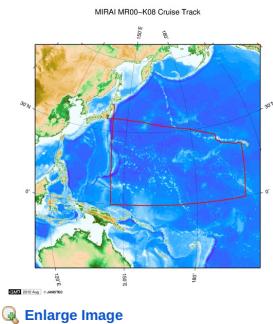
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read2.f](#)

#### Related Information



**MR00-K08**  
Ship Name: MIRAI  
Period: 2000-12-27 - 2001-02-07  
Chief Scientist: Takeshi Kawano (JAMSTEC)

#### Update History

2017-06-22	An observation data was registerd.
2014-07-12	An observation data was registerd.
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#### Information of the Submersibles

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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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Cruise ID:

#### Go to a Dive Information

Dive ID:

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

Cruise ID: **MR00-K08**

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

Data Policy: **JAMSTEC**

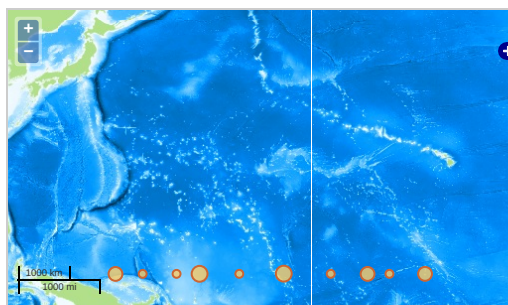
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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

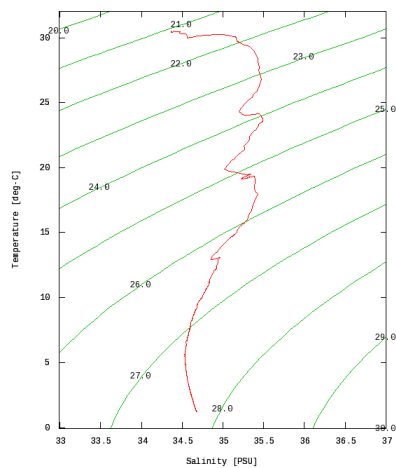
Imagery reproduced from ...

### Figures

003L01



MR00-K08: 003L01  
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"/>	003L01.dat
<input type="checkbox"/>	003L02.dat
<input type="checkbox"/>	003L03.dat
<input type="checkbox"/>	003L04.dat
<input type="checkbox"/>	004L01.dat
<input type="checkbox"/>	005L01.dat
<input type="checkbox"/>	006L01.dat
<input type="checkbox"/>	006L02.dat
<input type="checkbox"/>	006L03.dat
<input type="checkbox"/>	006L04.dat
<input type="checkbox"/>	007L01.dat
<input type="checkbox"/>	008L01.dat
<input type="checkbox"/>	009L01.dat

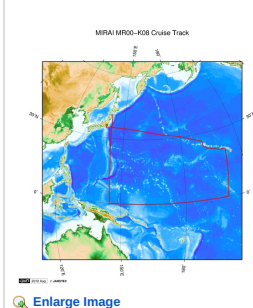
## File Names

009L03.dat  
009L04.dat  
010L01.dat  
011L01.dat  
012L01.dat  
012L02.dat  
012L03.dat  
012L04.dat  
013L01.dat  
014L01.dat  
014L02.dat  
014L03.dat  
014L04.dat  
ex\_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
003L01	2001-01-28 00:26	-0.0156	145.0145
003L02	2001-01-28 17:55	-0.0136	144.9618
003L03	2001-01-29 01:00	-0.0160	144.9905
003L04	2001-01-29 06:37	0.0026	144.8851
004L01	2001-01-27 01:00	-0.0030	149.8360
005L01	2001-01-25 23:30	-0.0013	155.8574
006L01	2001-01-23 16:52	0.0061	159.9475
006L02	2001-01-23 23:55	0.0400	159.9281
006L03	2001-01-24 05:24	-0.0128	159.9655
006L04	2001-01-24 08:30	0.0036	159.9975
007L01	2001-01-22 23:55	0.0006	161.9990
008L01	2001-01-21 23:55	0.0000	166.9995
009L01	2001-01-19 15:54	0.0383	174.8970
009L02	2001-01-19 22:51	0.0468	174.8801
009L03	2001-01-20 04:31	0.0238	174.8655
009L04	2001-01-20 07:24	0.0223	174.8181
010L01	2001-01-18 22:54	0.0011	177.4960
011L01	2001-01-17 22:59	0.0015	-176.7675
012L01	2001-01-15 14:56	-0.0125	-170.2250
012L02	2001-01-15 21:50	-0.0121	-170.2210
012L03	2001-01-16 06:40	-0.0480	-170.2130
012L04	2001-01-16 19:27	-0.0105	-170.1623
013L01	2001-01-14 21:57	0.0001	-166.3408
014L01	2001-01-12 14:59	-0.0008	-160.0203
014L02	2001-01-12 21:42	0.0041	-160.0111
014L03	2001-01-13 04:06	-0.0288	-160.1105
014L04	2001-01-13 06:31	-0.0336	-160.1198

## Related Information



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Ship Name: MIRAI  
Period: 2000-12-27 - 2001-02-07  
Chief Scientist: Takeshi Kawano (JAMSTEC)

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