

## MIRAI MR00-K04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR00-K04](#)

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/MR00-K04\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR00-K04_all.pdf)

### [For Using Data](#)

**Principal Investigator**

Data Management Office

**Use Constraints**

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

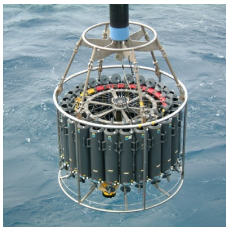
**Data Citation**

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

### Instrument

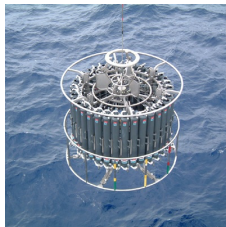
Instrument:

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



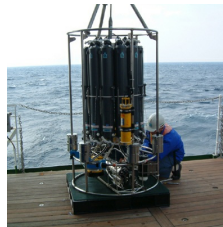
Instrument:

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



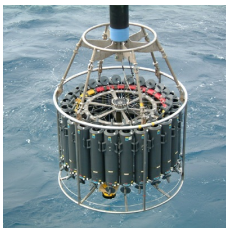
Instrument:

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 MR00-K04 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR00-K04.

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 : 51190

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 : 031524

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

#### • 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 : 041202
    - 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 : 041206
    - Measurement range : 0.0 to 7 S/m
    - Accuracy : 0.0003 S/m
    - Resolution : 0.00004 S/m

Sensors used in each cast is as follows.

Cast name	Serial number of sensor		Salinity	Dissolved Oxygen
	Pressure	Temperature		
K4S001	51190	031524	041202	-
K4S002	51190	031524	041202	-
K4S003	51190	031524	041202	-
K4S004	51190	031524	041202	-
K4S005	51190	031524	041202	-
K4S006	51190	031524	041202	-
K4S007	51190	031524	041202	-
K4S008	51190	031524	041202	-
K4S009	51190	031524	041202	-
K4S010	51190	031524	041202	-
K4S011	51190	031524	041202	-
K4S012	51190	031524	041202	-
K4S013	51190	031524	041202	-
K4S014	51190	031524	041202	-
K4S015	51190	031524	041202	-
K4S016	51190	031524	041202	-
K4S017	51190	031524	041202	-
K4S018	51190	031524	041202	-
K4S019	51190	031524	041202	-
K4S020	51190	031524	041202	-
K4S021	51190	031524	041202	-
K4S022	51190	031524	041202	-
K4S023	51190	031524	041202	-
K4S024	51190	031524	041202	-
K4S025	51190	031524	041202	-
K4S026	51190	031524	041202	-
K4S027	51190	031525	041206	-
K4S028	51190	031524	041202	-
K4S029	51190	031524	041202	-
K4S030	51190	031524	041202	-
K4S031	51190	031524	041202	-
K4S032	51190	031524	041202	-
K4S033	51190	031524	041202	-
K4S034	51190	031524	041202	-
K4S035	51190	031524	041202	-
K4S036	51190	031524	041202	-
K4S037	51190	031524	041202	-
K4S038	51190	031524	041202	-
K4S039	51190	031524	041202	-
K4S040	51190	031524	041202	-
K4S041	51190	031524	041202	-
K4S042	51190	031524	041202	-
K4S043	51190	031524	041202	-
K4S044	51190	031524	041202	-
K4S045	51190	031524	041202	-
K4S046	51190	031524	041202	-
K4S047	51190	031524	041202	-
K4S048	51190	031524	041202	-
K4S049	51190	031524	041202	-

Calibration Information

Calibration Information is as follows.

[Calibration Information](#)

Data processing

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

command	function
datcrv	Convert raw data to engineering units, and store converted data in file.
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.

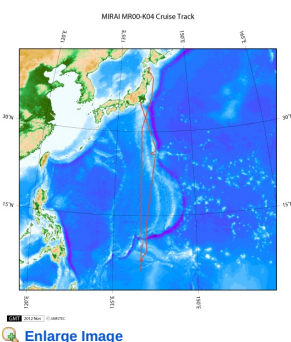
- 1) The gradient check of adjacent depth data
- 2) The density inversion check
- 3) The broad range check set up at given ocean space and depth

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.

#### Related Information



#### MR00-K04

Ship Name: MIRAI  
Period: 2000-06-12 - 2000-07-05  
Chief Scientist: Kunio Yoneyama (JAMSTEC)

[Enlarge Image](#)

#### Update History

2017-06-22	An observation data was registerd.
2014-08-20	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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Dive ID:

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## MIRAI MR00-K04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR00-K04](#)

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

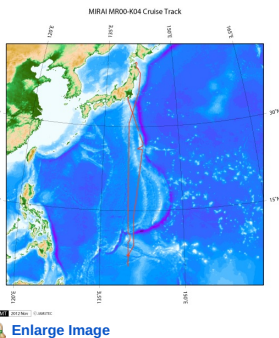
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read2.f](#)

#### Related Information



**MR00-K04**  
Ship Name: MIRAI  
Period: 2000-06-12 - 2000-07-05  
Chief Scientist: Kunio Yoneyama (JAMSTEC)

#### Update History

2017-06-22	An observation data was registerd.
2014-08-20	An observation data was registerd.
2014-07-12	An observation data was registerd.
2014-02-06	An observation data was registerd.
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## MIRAI MR00-K04 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR00-K04](#)

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

Data Policy: [JAMSTEC](#)

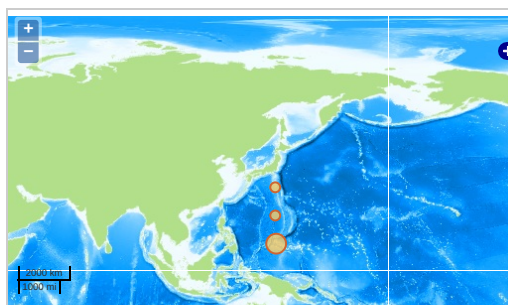
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

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

### Observation Map

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

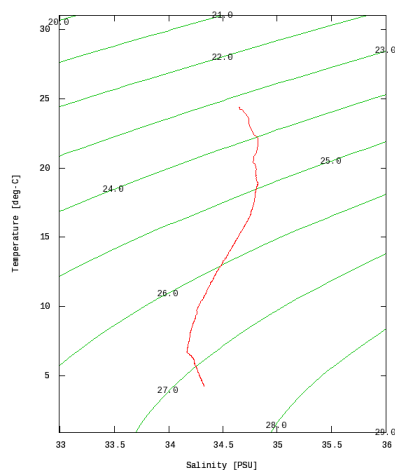


### Figures

K4S001



MR00-K04: K4S001  
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"/>	K4S001.dat
<input type="checkbox"/>	K4S002.dat
<input type="checkbox"/>	K4S003.dat
<input type="checkbox"/>	K4S004.dat
<input type="checkbox"/>	K4S005.dat
<input type="checkbox"/>	K4S006.dat
<input type="checkbox"/>	K4S007.dat
<input type="checkbox"/>	K4S008.dat
<input type="checkbox"/>	K4S009.dat
<input type="checkbox"/>	K4S010.dat
<input type="checkbox"/>	K4S011.dat
<input type="checkbox"/>	K4S012.dat
<input type="checkbox"/>	K4S013.dat

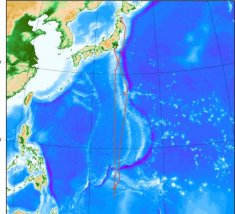
 K4S014.dat
 K4S015.dat
 K4S016.dat
 K4S017.dat
 K4S018.dat
 K4S019.dat
 K4S020.dat
 K4S021.dat
 K4S022.dat
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 K4S042.dat
 K4S043.dat
 K4S044.dat
 K4S045.dat
 K4S046.dat
 K4S047.dat
 K4S048.dat
 K4S049.dat
 ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
K4S001	2000-06-15 05:51	30.0045	139.9973
K4S002	2000-06-16 01:54	25.0008	139.9983
K4S003	2000-06-16 22:53	20.0021	139.9991
K4S004	2000-06-17 19:22	15.0010	139.9983
K4S005	2000-06-18 17:51	9.9996	140.3325
K4S006	2000-06-19 14:41	5.0001	139.9986
K4S007	2000-06-20 05:26	6.9751	140.0165
K4S008	2000-06-20 11:27	6.9996	139.9871
K4S009	2000-06-20 17:22	6.9918	140.0015
K4S010	2000-06-20 23:28	6.9948	140.0080
K4S011	2000-06-21 05:26	6.9988	140.0000
K4S012	2000-06-21 11:27	7.0166	140.0128
K4S013	2000-06-21 17:27	7.0230	139.9981
K4S014	2000-06-21 23:24	7.0178	140.0180
K4S015	2000-06-22 05:25	7.0270	140.0081
K4S016	2000-06-22 11:33	7.0115	139.9555
K4S017	2000-06-22 17:28	7.0105	140.0073
K4S018	2000-06-22 23:27	7.0131	139.9966
K4S019	2000-06-23 05:27	7.0256	139.9971
K4S020	2000-06-23 11:37	6.9916	139.9910
K4S021	2000-06-23 17:29	6.9913	140.0013
K4S022	2000-06-23 23:34	6.9918	140.0006
K4S023	2000-06-24 05:28	6.9931	140.0110
K4S024	2000-06-24 11:27	7.0020	139.9910
K4S025	2000-06-24 17:28	6.9856	140.0193
K4S026	2000-06-24 23:29	7.0011	139.9931
K4S027	2000-06-25 05:29	7.0171	140.0003
K4S028	2000-06-25 11:28	7.0030	139.9946
K4S029	2000-06-25 17:28	6.9920	140.0056
K4S030	2000-06-25 23:28	6.9980	140.0020
K4S031	2000-06-26 05:28	7.0058	140.0061
K4S032	2000-06-26 11:29	6.9938	140.0043
K4S033	2000-06-26 17:34	6.9570	140.0075
K4S034	2000-06-26 23:28	7.0018	139.9951
K4S035	2000-06-27 05:27	6.9983	139.9983
K4S036	2000-06-27 11:22	6.9960	139.9958
K4S037	2000-06-27 17:29	6.9785	140.0435
K4S038	2000-06-27 23:38	6.9935	139.9963
K4S039	2000-06-28 05:29	6.9716	140.0320
K4S040	2000-06-28 11:24	6.9975	139.9956
K4S041	2000-06-28 17:28	6.9945	139.9925
K4S042	2000-06-28 23:28	6.9970	139.9991

Observation	Time and Date	East [°]	Lat [°]
K4S044	2000-06-29 11:31	7.0001	139.9940
K4S045	2000-06-29 17:26	7.0030	139.9978
K4S046	2000-06-29 23:30	6.9960	139.9960
K4S047	2000-06-30 05:31	7.0101	140.0043
K4S048	2000-06-30 11:37	6.9990	139.9900
K4S049	2000-07-01 22:55	14.6868	141.0958

MR00-MR00-K04 Cruise Track




MR00-K04

Ship Name: MIRAI

Period: 2000-06-12 - 2000-07-05

Chief Scientist: Kunio Yoneyama (JAMSTEC)

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Update History	
2017-06-22	An observation data was registered.
2014-08-20	An observation data was registered.
2014-07-12	An observation data was registered.
2014-02-06	An observation data was registered.
2014-02-05	An observation data was registered.
2012-12-25	An observation data was registered.

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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

Go to a Cruise Information

Cruise ID:

Go

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Dive ID:

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