

MIRAI MR99-K02 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: [MR99-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/MR99-K02_all.pdf

[For Using Data](#)

Principal Investigator

Data Management Office

Use Constraints

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

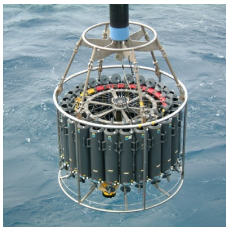
Data Citation

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

Instrument

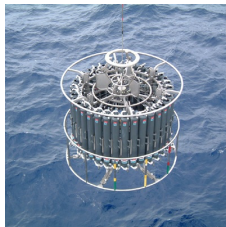
Instrument:

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



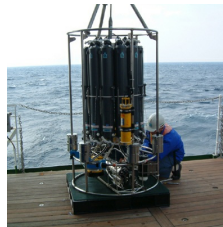
Instrument:

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



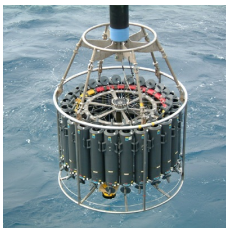
Instrument:

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 MR99-K02 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR99-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 : 42410

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 : 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 : 031524

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

- Resolution : 0.0002degC
- 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 : 041203
 - 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 : 130338
 - 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
99K2K1L1	42410	031524	041203	130338
99K2K1S1	42423	031359	041202	-
99K2K1L2	42410	031524	041203	130338
99K2K1L3	42410	031524	041203	130338
99K2K1S2	42423	031359	041202	-
99K2K2L1	42410	031524	041203	130338
99K2K2S1	42423	031359	041202	-
99K2K3L1	42410	031524	041203	130338
99K2K3S1	42423	031359	041202	-
99K2K3L2	42410	031524	041203	130338
99K2K4L1	42410	031524	041203	130338
99K2K4S1	42423	031359	041202	-
99K2K4L2	42410	031524	041203	130338
99K2K5L1	42410	031524	041203	130338
99K2K5S1	42423	031359	041202	-
99K2K5L2	42410	031524	041203	130338
99K2O1L1	42410	031524	041203	130338
99K250L1	42410	031524	041203	130338
99K250S1	42423	031359	041202	130338
99K250L2	42410	031524	041203	130338
99K250S2	42423	031359	041202	130338
99K250L3	42410	031524	041203	130338
99K2O2L1	42410	031524	041203	130338
99K240L1	42410	031524	041203	130338
99K240S1	42423	031359	041202	130338
99K240L2	42410	031524	041203	130338
99K240L3	42410	031524	041203	130338
99K240S2	42423	031359	041202	130338
99K2O3L1	42410	031524	041203	130338
KN21DL1	42410	031524	041203	130338
KN21DS1	42423	031359	041202	130338
KN21DL2	42410	031524	041203	130338
KN21DS2	42423	031359	041202	130338
KN21DL3	42410	031524	041203	130338
KN23DL1	42410	031524	041203	130338
99K2HPL1	42410	031524	041203	130338
99K2HPS1	42423	031359	041202	-
99K2HPL2	42410	031524	041203	130338
99K2HPL3	42410	031524	041203	130338
99K2LPL1	42410	031524	041203	130338
99K2LPS1	42423	031359	041202	130338
99K2LPL2	42410	031524	041203	130338
99K2HPL4	42410	031524	041203	130338
99K2HPS2	42423	031359	041202	130338

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.

command	function
aligncd	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.
section	Extract rows of data from file.
lopedit	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.

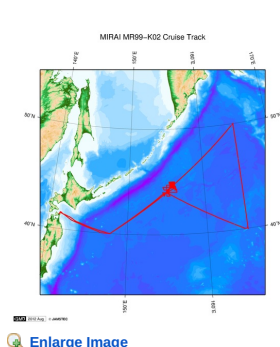
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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) 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



MR99-K02

Ship Name: MIRAI
Period: 1999-05-07 - 1999-05-30
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2, Station KNOT]

[Enlarge Image](#)

Update History

2017-06-22	An observation data was registered.
2014-08-19	An observation data was registered.
2014-07-12	An observation data was registered.
2014-02-07	An observation data was registered.
2013-03-27	An observation data was registered.
2013-01-25	An observation data was registered.

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URASHIMA
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6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER (SHELL)
POWER GRAB SAMPLER (CLOW)
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MIRAI MR99-K02 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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 Cruise ID: [MR99-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

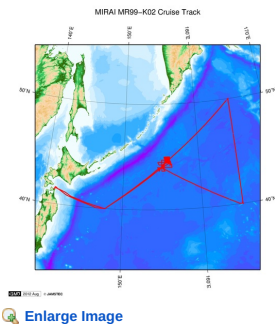
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR99-K02

Ship Name: MIRAI
Period: 1999-05-07 - 1999-05-30
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2, Station KNOT]

Update History

2017-06-22	An observation data was registerd.
2014-08-19	An observation data was registerd.
2014-07-12	An observation data was registerd.
2014-02-07	An observation data was registerd.
2013-03-27	An observation data was registerd.
2013-01-25	An observation data was registerd.

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MIRAI MR99-K02 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: **MR99-K02**

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

Data Policy: **JAMSTEC**

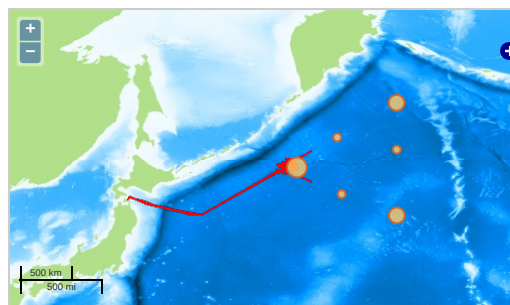
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.

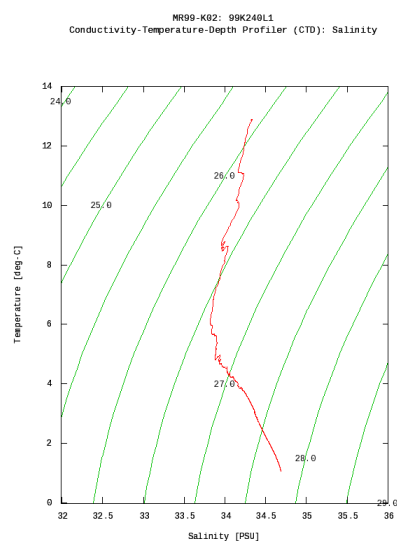


— Observation Line — Navigation ● Observation, Dive Point, Hole

Imagery reproduced from ...

Figures

99K240L1





















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

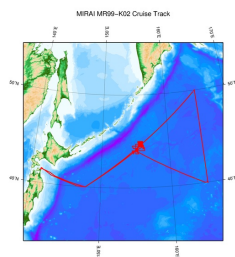
<input type="checkbox"/>	99K240L1.dat
<input type="checkbox"/>	99K240L2.dat
<input type="checkbox"/>	99K240L3.dat
<input type="checkbox"/>	99K240S1.dat
<input type="checkbox"/>	99K240S2.dat
<input type="checkbox"/>	99K250L1.dat
<input type="checkbox"/>	99K250L2.dat
<input type="checkbox"/>	99K250L3.dat
<input type="checkbox"/>	99K250S1.dat
<input type="checkbox"/>	99K250S2.dat
<input type="checkbox"/>	99K2HPL1.dat
<input type="checkbox"/>	99K2HPL2.dat
<input type="checkbox"/>	99K2HPL3.dat

	99K2HPL4.dat
	99K2HPS1.dat
	99K2HPS2.dat
	99K2K1L1.dat
	99K2K1L2.dat
	99K2K1L3.dat
	99K2K1S1.dat
	99K2K1S2.dat
	99K2K2L1.dat
	99K2K2S1.dat
	99K2K3L1.dat
	99K2K3L2.dat
	99K2K3S1.dat
	99K2K4L1.dat
	99K2K4L2.dat
	99K2K4S1.dat
	99K2K5L1.dat
	99K2K5L2.dat
	99K2K5S1.dat
	99K2LPL1.dat
	99K2LPL2.dat
	99K2LPS1.dat
	99K2O1L1.dat
	99K2O2L1.dat
	99K2O3L1.dat
	KN21DL1.dat
	KN21DL2.dat
	KN21DL3.dat
	KN21DS1.dat
	KN21DS2.dat
	KN23DL1.dat
	ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
99K240L1	1999-05-20 06:00	40.0053	165.0138
99K240L2	1999-05-20 11:36	39.9976	165.0023
99K240L3	1999-05-20 12:43	40.0008	165.0021
99K240S1	1999-05-20 09:26	39.9908	165.0040
99K240S2	1999-05-20 14:22	40.0043	164.9990
99K250L1	1999-05-17 02:35	50.0000	164.9991
99K250L2	1999-05-17 05:05	49.9983	164.9993
99K250L3	1999-05-17 09:17	49.9921	164.9898
99K250S1	1999-05-17 04:29	49.9985	165.0010
99K250S2	1999-05-17 06:25	50.0018	164.9976
99K2HPL1	1999-05-26 23:30	44.2605	156.1475
99K2HPL2	1999-05-27 01:42	44.2488	156.1561
99K2HPL3	1999-05-27 03:01	44.2581	156.1720
99K2HPL4	1999-05-27 15:43	44.2228	156.2336
99K2HPS1	1999-05-27 00:28	44.2568	156.1536
99K2HPS2	1999-05-27 17:03	44.2256	156.2460
99K2K1L1	1999-05-10 04:52	43.9913	155.0011
99K2K1L2	1999-05-10 11:17	43.9826	155.0026
99K2K1L3	1999-05-10 12:46	43.9838	155.0016
99K2K1S1	1999-05-10 08:27	43.9786	154.9996
99K2K1S2	1999-05-10 14:20	43.9831	155.0071
99K2K2L1	1999-05-11 02:10	43.9928	154.9986
99K2K2S1	1999-05-11 03:33	44.0000	155.0156
99K2K3L1	1999-05-12 07:04	44.0038	154.4971
99K2K3L2	1999-05-12 10:30	44.0130	154.4678
99K2K3S1	1999-05-12 08:19	44.0010	154.4815
99K2K4L1	1999-05-13 23:13	44.6686	155.8516
99K2K4L2	1999-05-14 01:46	44.6581	155.8271
99K2K4S1	1999-05-14 00:42	44.6584	155.8266
99K2K5L1	1999-05-14 23:40	44.7788	156.0260
99K2K5L2	1999-05-15 01:46	44.7786	156.0265
99K2K5S1	1999-05-15 00:37	44.7796	156.0263
99K2LPL1	1999-05-27 10:21	44.5146	156.2010
99K2LPL2	1999-05-27 11:47	44.5166	156.2035
99K2LPS1	1999-05-27 11:13	44.5171	156.2021
99K2O1L1	1999-05-16 01:26	46.9250	159.7303
99K2O2L1	1999-05-19 01:23	45.8438	165.0086
99K2O3L1	1999-05-22 01:17	41.8871	160.1180
KN21DL1	1999-05-22 23:57	44.0013	155.0021
KN21DL2	1999-05-23 05:06	44.0070	154.9763
KN21DL3	1999-05-23 08:55	44.0345	154.9936
KN21DS1	1999-05-23 04:34	44.0018	154.9788
KN21DS2	1999-05-23 06:28	44.0266	154.9860
KN23DL1	1999-05-25 00:13	44.0095	155.2408

Related Information



 [Enlarge Image](#)

MR99-K02

Ship Name: MIRAI
Period: 1999-05-07 - 1999-05-30
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2, Station KNOT]

Update History

2017-06-22	An observation data was registered.
2014-08-19	An observation data was registered.
2014-07-12	An observation data was registered.
2014-02-07	An observation data was registered.
2013-03-27	An observation data was registered.
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