MIRAI MR99-K01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-04-09

ReadMe | Observation Data | Data Format

Cruise ID: MR99-K01
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-K01_all.pdf

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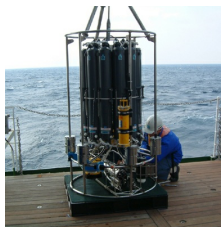Water sampling system with CTD (30 litters * 24 bottles)

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-K01 cruise are presented in "System".
    The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR99-K01.
        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 : 031314
        Measurement range : -5.0 to +35degC
        Accuracy : 0.001degC
        Resolution : 0.0002degC
    • Salinity sensor
        Model : SBE4, Sea-Bird Electronics,Inc.
        Serial number : 041088
        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			
	Pressure	Temperature	Salinity	Dissolved Oxygen
C02	42423	031314	041088	-
C03	42423	031314	041088	-
C04	42423	031314	041088	-
C05	42423	031314	041088	-
C06	42423	031314	041088	-
C07	42423	031314	041088	-
C08	42423	031314	041088	-
C09	42423	031314	041088	-
C10	42423	031314	041088	-
C11	42423	031314	041088	-
C12	42423	031314	041088	-
C13	42423	031314	041088	-
C14	42423	031314	041088	-
C15	42423	031314	041088	-
C16	42423	031314	041088	-
C17	42423	031314	041088	-
C18	42423	031314	041088	-
C19	42423	031314	041088	-
C20	42423	031314	041088	-
C21	42423	031314	041088	-
C22	42423	031314	041088	-
C23	42423	031314	041088	-
C24	42423	031314	041088	-
C25	42423	031314	041088	-
C26	42423	031314	041088	-
C27	42423	031314	041088	-
C28	42423	031314	041088	-
C29	42423	031314	041088	-
C30	42423	031314	041088	-
C31	42423	031314	041088	-
C32	42423	031314	041088	-
C33	42423	031314	041088	-
C34	42423	031314	041088	-
C35	42423	031314	041088	-
C36	42423	031314	041088	-
C37	42423	031314	041088	-
C38	42423	031314	041088	-
C39	42423	031314	041088	-
C40	42423	031314	041088	-
C41	42423	031314	041088	-
C42	42423	031314	041088	-

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).
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.
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.
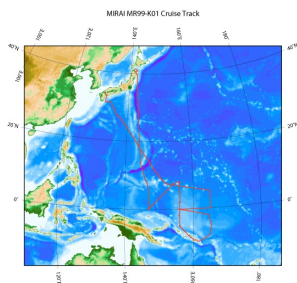
1) The gradient check of adjacent depth data

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.

Related Information

MIRAI MR99-K01 Cruise Track

Enlarge Image

MR99-K01
Ship Name: MIRAI
Period: 1999-02-07 - 1999-03-31
Chief Scientist: Yoshifumi Kuroda (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

Update History

2018-04-09	An observation data was registerd.
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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Site Policy
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Application for Data and Samples
Data Policy

What's New
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Lists
Publication List
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Data
Map Search
Data Tree
Detailed Search

Information of the Ships
NATSUSHIMA
KAIYO
YOKOSUKA
MIRAI
KAIREI
CHIKYU
KAIMEI
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

Go to a Cruise Information
Cruise ID: [____] Go

Go to a Dive Information
Dive ID: [----] [____] Go

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

MIRAI MR99-K01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-04-09

ReadMe | **Observation Data** | **Data Format**

Cruise ID: **MR99-K01**
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	MRYY-(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
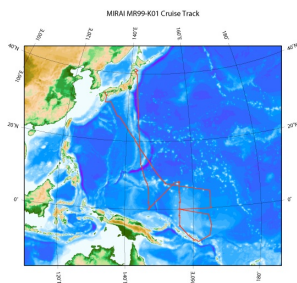   A - failed visual check

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

MIRAI MR99-K01 Cruise Track

MR99-K01
Ship Name: MIRAI
Period: 1999-02-07 - 1999-03-31
Chief Scientist: Yoshifumi Kuroda (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

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Update History

2018-04-09	An observation data was registerd.
2017-06-22	An observation data was registerd.
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2013-01-25	An observation data was registerd.

DARWIN
Data and Sample Research System
for Whole Cruise Information in JAMSTEC

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MIRAI MR99-K01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-04-09

| ReadMe | Observation Data | Data Format |

Cruise ID: **MR99-K01**
Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed
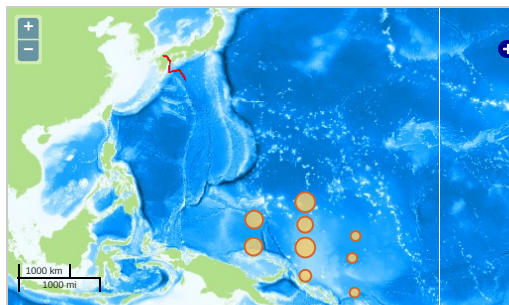**Data Policy**: **JAMSTEC**
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen
Science Keywords:

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

Observation Map

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

1000 km
1000 mi

Imagery reproduced from ...

▬ ... Observation Line   ▬ ... Navigation   ⬤ ... Observation, Dive Point, Hole
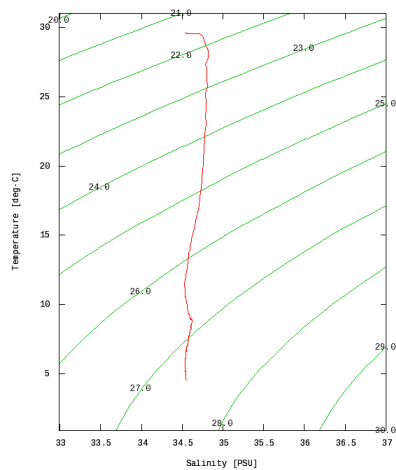
Figures

C02

MR99-K01: C02
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
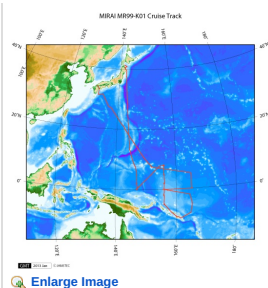
Add to Basket

	File names
☐	C02.dat
☐	C03.dat
☐	C04.dat
☐	C05.dat
☐	C06.dat
☐	C07.dat
☐	C08.dat
☐	C09.dat
☐	C10.dat
☐	C11.dat
☐	C12.dat
☐	C13.dat
☐	C14.dat

- ☐ C15.dat File names
- ☐ C16.dat
- ☐ C17.dat
- ☐ C18.dat
- ☐ C19.dat
- ☐ C20.dat
- ☐ C21.dat
- ☐ C22.dat
- ☐ C23.dat
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- ☐ C35.dat
- ☐ C36.dat
- ☐ C37.dat
- ☐ C38.dat
- ☐ C39.dat
- ☐ C40.dat
- ☐ C41.dat
- ☐ C42.dat
- ☐ ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
C02	1999-02-16 06:34	4.8871	146.9620
C03	1999-02-16 18:30	4.8865	146.9618
C04	1999-02-17 06:29	4.8846	146.9596
C05	1999-02-18 06:30	2.0990	146.9436
C06	1999-02-18 18:34	2.0978	146.9470
C07	1999-02-19 06:27	2.0964	146.9431
C08	1999-02-20 01:45	0.0958	146.8546
C09	1999-02-20 13:28	0.0966	146.8553
C10	1999-02-21 01:02	0.0943	146.8546
C11	1999-02-21 06:04	-0.0126	146.8661
C12	1999-02-21 21:57	-0.0131	147.0651
C13	1999-02-22 03:54	0.0481	146.8516
C14	1999-02-25 02:31	7.9903	156.0328
C15	1999-02-25 12:55	7.9923	156.0331
C16	1999-02-26 02:27	7.9918	156.0336
C17	1999-02-26 07:28	7.0015	155.9996
C18	1999-02-27 02:02	5.0443	155.9658
C19	1999-02-27 12:57	5.0430	155.9800
C20	1999-02-28 01:57	5.0431	155.9688
C21	1999-02-28 08:37	3.9956	156.0050
C22	1999-03-01 01:35	1.9423	155.9991
C23	1999-03-01 12:57	1.9421	155.9993
C24	1999-03-02 01:25	1.9416	155.9991
C25	1999-03-02 07:37	1.0003	155.9991
C26	1999-03-03 01:12	-0.0665	156.0325
C27	1999-03-03 12:53	-0.0655	156.0320
C28	1999-03-04 00:59	-0.0645	156.0323
C29	1999-03-04 07:47	-1.0016	155.9988
C30	1999-03-05 01:18	-1.9920	155.9584
C31	1999-03-05 12:55	-1.9925	155.9571
C32	1999-03-06 00:54	-1.9921	155.9506
C33	1999-03-06 06:48	-2.9986	155.9976
C34	1999-03-07 01:11	-5.0803	156.0493
C35	1999-03-07 12:54	-5.0796	156.0518
C36	1999-03-08 00:52	-5.0806	156.0496
C37	1999-03-13 04:48	-8.0545	164.8101
C38	1999-03-14 04:35	-4.9750	165.1993
C39	1999-03-14 20:23	-1.9248	164.3680
C40	1999-03-20 05:44	-0.0066	165.0091
C41	1999-03-21 04:48	1.9775	164.9623
C42	1999-03-21 18:26	5.0776	164.9870

Related Information

MR99-K01
Ship Name: MIRAI
Period: 1999-02-07 - 1999-03-31
Chief Scientist: Yoshifumi Kuroda (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

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