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HAKUHO MARU KH-18-J02C Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2021-09-15

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Observation Data

Data Format

Cruise ID: [KH-18-J02C](#)

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/KH-18-J02C_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:

CTD (conductivity temperature depth measurements)



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 KH-18-J02C cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in KH-18-J02C.

SEASAVE(ver 7.23.2) for data acquisition

SEASOFT(ver 7.23.2) for data processing

Data presented on this website is averaged over 1db.

System

Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Serial number : 89961

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 : 034378

Measurement range : -5.0 to +35degC

Accuracy :0.001degC

Resolution : 0.0002degC

Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 042732

Measurement range : 0.0 to 7 S/m

Accuracy : 0.0003 S/m

Resolution : 0.00004 S/m

DO sensor

Model : SBE43, Sea-Bird Electronics,Inc.

Serial number : 430781

Measurement range : 120% of surface saturation

Accuracy : 2% of saturation

Sensors used in each cast is as follows.

Serial number of sensor

Cast name

Pressure

Temperature

Salinity

Dissolved Oxygen

Cast name	Pressure Serial number of sensor	Temperature Serial number of sensor	Salinity	Dissolved Oxygen
C2_1	89961	034378	042732	430781
C3_1	89961	034378	042732	430781
C4_1	89961	034378	042732	430781
C5_1	89961	034378	042732	430781
C6_1	89961	034378	042732	430781
D4_1	89961	034378	042732	430781
D5_1	89961	034378	042732	430781
D6_1	89961	034378	042732	430781
D7_1	89961	034378	042732	430781
D8_1	89961	034378	042732	430781
M1_1	89961	034378	042732	430781
M1_2	89961	034378	042732	430781
M2_1	89961	034378	042732	430781
M3_1	89961	034378	042732	430781
O1_1	89961	034378	042732	430781
O2_1	89961	034378	042732	430781
O3_1	89961	034378	042732	430781
O4_1	89961	034378	042732	430781
O5_1	89961	034378	042732	430781
O6_1	89961	034378	042732	430781

Data processing

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

"**" is not SEASOFT original procedure.

command	function
datcnv	Convert raw data to engineering units, and store converted data in file.
wildedit	Mark a data value with badflag to eliminate wild points.
filter	Low-pass filter columns of data.
wfilter	Median filter removes spikes of fluorometer data.
alignctd	Align data relative to pressure(typically used for conductivity, temperature, and oxygen)
celltm	Perform conductivity thermal mass correction.
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.
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.

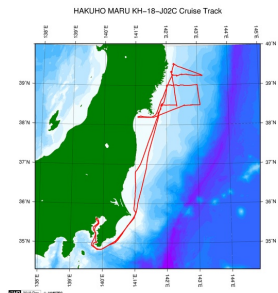
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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



KH-18-J02C

Ship Name: HAKUHO MARU


Period: 2018-07-01 - 2018-07-09

Chief Scientist: Shuichi Watanabe (JAMSTEC)

Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]

Proposal Researches on marine ecosystem dynamics in the Tsunami affected area off Sanriku

Title:



Update History

2021-09-15	An observation data was registerd.
2020-01-31	An observation data was registerd.

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

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HAKUHO MARU KH-18-J02C Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2021-09-15

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

 Cruise ID: [KH-18-J02C](#)

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

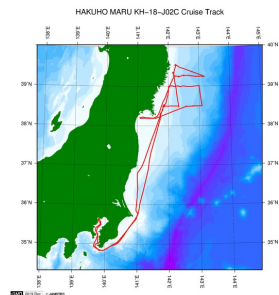
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



[Enlarge Image](#)

KH-18-J02C

Ship Name: HAKUHO MARU

Period: 2018-07-01 - 2018-07-09

Chief Scientist: Shuichi Watanabe (JAMSTEC)

Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]

Proposal Researches on marine ecosystem dynamics in the Tsunami affected area off Sanriku

Title:

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

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Data Policy: **JAMSTEC**

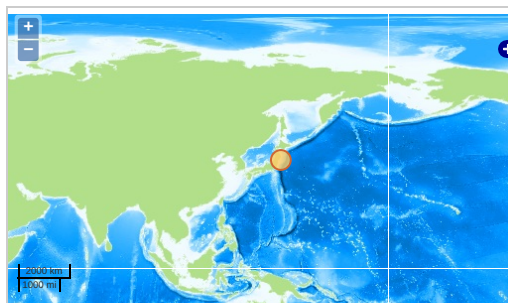
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.

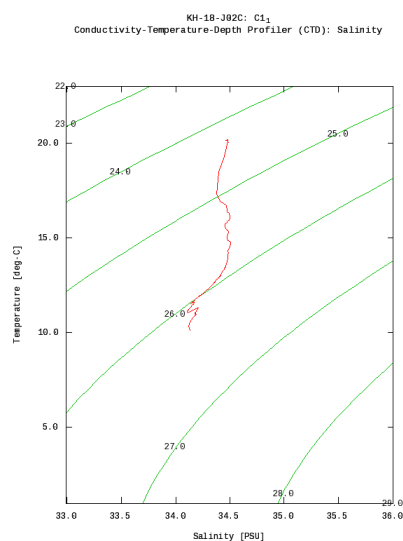


— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Imagery reproduced from ...

Figures

C1_1



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"/>	C1_1.dat
<input type="checkbox"/>	C2_1.dat
<input type="checkbox"/>	C3_1.dat
<input type="checkbox"/>	C4_1.dat
<input type="checkbox"/>	C5_1.dat
<input type="checkbox"/>	C6_1.dat
<input type="checkbox"/>	D4_1.dat
<input type="checkbox"/>	D5_1.dat
<input type="checkbox"/>	D6_1.dat
<input type="checkbox"/>	D7_1.dat
<input type="checkbox"/>	D8_1.dat
<input type="checkbox"/>	M1_1.dat
<input type="checkbox"/>	M1_2.dat

File names

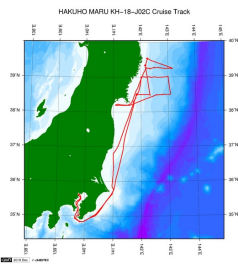
[M3_1.dat](#)
[O1_1.dat](#)
[O2_1.dat](#)
[O3_1.dat](#)
[O4_1.dat](#)
[O5_1.dat](#)
[O6_1.dat](#)
[ex_read2.f \(Sample Program\)](#)

● Observation List

The list of observation is shown as follows.

Observation	Time and Date	Lat. [°]	Lon. [°]
C1_1	2018-07-06 14:34	39.0020	142.0015
C2_1	2018-07-06 12:54	39.0033	142.1608
C3_1	2018-07-06 11:03	38.9981	142.3565
C4_1	2018-07-06 09:05	39.0005	142.5606
C5_1	2018-07-06 06:59	38.9986	142.7915
C6_1	2018-07-06 04:49	39.0136	142.9938
D4_1	2018-07-02 11:42	38.5008	142.0843
D5_1	2018-07-02 15:00	38.4948	142.3355
D6_1	2018-07-05 15:50	38.5010	142.5826
D7_1	2018-07-05 20:48	38.4995	142.8020
D8_1	2018-07-05 23:40	38.5038	143.0840
M1_1	2018-07-02 08:43	38.5045	141.8526
M1_2	2018-07-02 09:15	38.5083	141.8533
M2_1	2018-07-03 00:18	39.3458	142.1720
M3_1	2018-07-03 05:04	39.5336	142.2535
O1_1	2018-07-04 00:51	39.2635	142.2010
O2_1	2018-07-03 21:54	39.2346	142.3351
O3_1	2018-07-03 19:53	39.2745	142.5045
O4_1	2018-07-03 16:21	39.2701	142.6670
O5_1	2018-07-03 13:51	39.2448	142.9168
O6_1	2018-07-03 10:07	39.2490	143.1670

Related Information



KH-18-J02C
Ship Name: HAKUHO MARU
Period: 2018-07-01 - 2018-07-09
Chief Scientist: Shuichi Watanabe (JAMSTEC)
Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]
Proposal: Researches on marine ecosystem dynamics in the Tsunami affected area off Sanriku
Title:

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