

SHINSEI MARU KS-17-J08C Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-12-13

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

Cruise ID: [KS-17-J08C](#)

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/KS-17-J08C_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 KS-17-J08C cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in KS-17-J08C.

SEASAVE(ver 7.21f) for data acquisition

SEASOFT(ver 7.21i) for data processing

Data presented on this website is averaged over 1db.

System

· Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Serial number : 127419

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 : 5760

Measurement range : -5.0 to +35degC

Accuracy :0.001degC

Resolution : 0.0002degC

· Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 4205

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 : 2525

Measurement range : 120% of surface saturation

Accuracy : 2% of saturation

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
D3_1	127419	5760	4205	2525
D4_1	127419	5760	4205	2525
D5_1	127419	5760	4205	2525
D6_1	127419	5760	4205	2525

D7_1 Cast name	Serial number of sensor	Pressure	Temperature	Salinity	Dissolved Oxygen
D7_2					
D8_1	127419	5760	4205	2525	
O1_1	127419	5760	4205	2525	
O2_1	127419	5760	4205	2525	
O3_1	127419	5760	4205	2525	
O4_1	127419	5760	4205	2525	
O5_1	127419	5760	4205	2525	
O6_1	127419	5760	4205	2525	
R2_1	127419	5760	4205	2525	

Data processing

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

*"a1" 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.

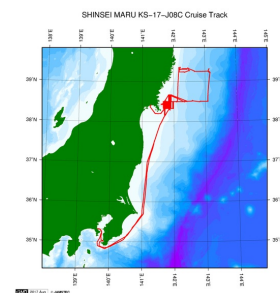
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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, photosynthetic active radiation, transmittance, turbidity, surface PAR, 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



[Enlarge Image](#)

KS-17-J08C

Ship Name: SHINSEI MARU

Period: 2017-05-28 - 2017-06-15

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

2017-12-13 An observation data was registered.

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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

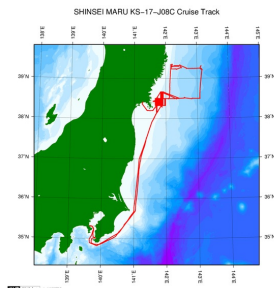
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



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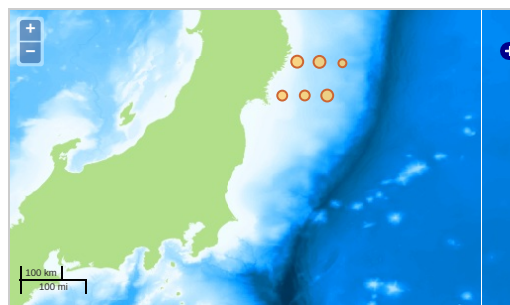
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TEMPERATURE TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY

Observation Map

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

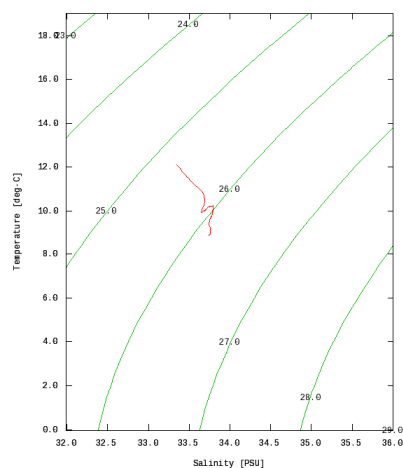


Figures

D3_1



KS-17-J08C: D3_1
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

- ☐ D3_1.dat
- ☐ D4_1.dat
- ☐ D5_1.dat
- ☐ D6_1.dat
- ☐ D7_1.dat
- ☐ D7_2.dat
- ☐ D8_1.dat
- ☐ O1_1.dat
- ☐ O2_1.dat
- ☐ O3_1.dat
- ☐ O4_1.dat
- ☐ O5_1.dat
- ☐ O6_1.dat



File names

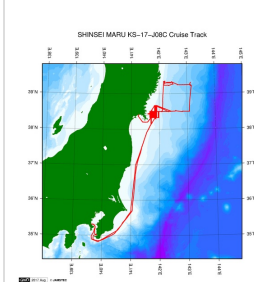
ex_read2.f (Sample Program)

● Observation List

The list of observation is shown as follows.

Observation	Time and Date	Lat. [°]	Lon. [°]
D3_1	2017-06-07 05:38	38.5006	141.8345
D4_1	2017-06-07 09:05	38.5025	142.0810
D5_1	2017-06-10 20:43	38.5033	142.3343
D6_1	2017-06-10 15:56	38.5256	142.5894
D7_1	2017-06-10 04:43	38.5020	142.8333
D7_2	2017-06-10 09:06	38.5023	142.8351
D8_1	2017-06-10 00:06	38.5015	143.0838
O1_1	2017-06-08 08:30	39.2536	142.1673
O2_1	2017-06-08 12:02	39.2358	142.3340
O3_1	2017-06-08 15:52	39.2701	142.4996
O4_1	2017-06-09 02:36	39.2490	142.6615
O5_1	2017-06-09 06:42	39.2495	142.9148
O6_1	2017-06-09 12:52	39.2185	143.1701
R2_1	2017-06-08 22:20	39.3341	142.4591

Related Information



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