

KAIYO KY14-08 Shipboard Acoustic Doppler Current Profiler (ADCP)

Last Modified: 2016-12-16

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

Cruise ID: [KY14-08](#)

Shipboard Acoustic Doppler Current Profiler (ADCP): Processed (DMO)-Corrected

Data Policy: [JAMSTEC](#)

Observation Items: Depth, Absolute velocity (zonal, meridional and vertical)

Science Keywords:

OCEANS > OCEAN CIRCULATION > OCEAN CURRENTS

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/KY14-08_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.

Period (UTC)

2014-06-16 02:40 – 2014-06-16 12:30

2014-06-14 03:10 – 2014-06-14 17:50

Instrument

Instrument:

Shipboard acoustic doppler current profiler (ADCP)



Overview

Acoustic Doppler Current Profiler (ADCP) transmits acoustic pulses from a transducer assembly. The transducers receive backscattered sounds from small particles floating with water currents. Using the Doppler shift principle, the backscattered sound data can be converted into components of water current velocity at multiple depths. The shipboard ADCP mounted on R/V KAIYO can measure the speed and direction of water currents for up to 128 layers. The dataset provided here is a 5-minute time average of absolute velocity data (i.e., water current velocity in geophysical coordinates) after various kinds of corrections. This data processing was carried out by DMO. See [here](#) for detailed correction methods.

Specifications

| | |
|---------------------------|---|
| Manufacturer: | Teledyne RD Instruments |
| System: | OS38 |
| Frequency: | 38.4kHz |
| Configuration: | 4-beam phased array |
| Beam angle: | 30deg |
| Transducer Depth: | 6.5m beneath calm water line |
| ADCP data logger: | Teledyne RD Instruments VmDas 1.46.5 |
| Ship heading | iXBlue/Octans |
| [instrument maker/model]: | |
| Navigation | Trimble/SPS751 (Fugro/StarFix-XP:D-GPS) |
| [instrument maker/model]: | |

ADCP configuration

| | |
|-----------------------------------|--|
| Depth range: | 48 m - 1,224 m (bin centers) |
| Bin length: | 24 m |
| Number of bins: | 50 |
| Blanking interval: | 16 m |
| Sound speed calculation: | used transducer temperature during acquisition |
| Correction of the alignment error | -0.020 deg |
| [corrected angle]: | |

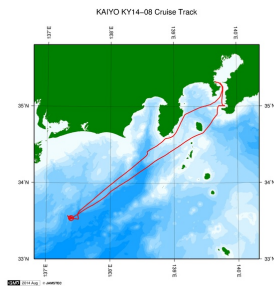
Need raw data?

If you would like the raw data set, please contact us from "Contact Us" above.

Note

An error of ADCP transducer temperature has occurred on R/V KAIYO since 2012 (KY12-02). Thus, we added data quality flag in the error periods. please see [here](#) 4.-5) about detail.

Related Information



[Enlarge Image](#)

KY14-08

Ship Name: KAIYO

Period: 2014-06-14 - 2014-06-17

Chief Scientist: Tatsuya Fukuda (JAMSTEC)

Proposal Development of the buoy observation system for tsunami and crustal movement

Title:

Update History

| | |
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| 2016-12-16 | An observation data was registerd. |
| 2016-09-27 | An observation data was registerd. |
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 Cruise ID: **KY14-08**

Shipboard Acoustic Doppler Current Profiler (ADCP) Processed (DMO)-Corrected

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ADCP Corrected,Qced 3

About data format

We provide the dataset as AWI Ocean Data View format (generic spreadsheet format).

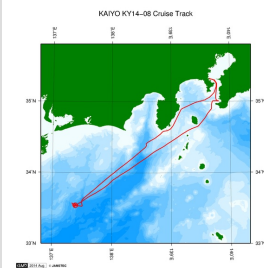
 Ocean Data View : <http://odv.awi.de/>

 Japanese Guide : http://www.jodc.go.jp/jodc_pub/digitalpub_j.html

Format Description (tab space separated)

| Data No. | Content | Unit | Format | Remarks |
|----------|--|--------|--------|---|
| 1 | CruiseID | i6 | | Cruise name |
| 2 | Station | i12 | | Station name set to be measurement time [YYYYMMDDhhmm] |
| 3 | Type | i1 | | Always "B", due to the number of data acquisition layers lower than 250-layer |
| 4 | Day | i10 | | Measurement day(UTC) [MM/DD/YYYY] |
| 5 | Time | i5 | | Measurement time [Center of average time](UTC) [hh:mm] |
| 6 | Longitude | degree | f8.4 | Position at the measurement time [0 - 360] |
| 7 | Latitude | degree | f8.4 | Position at the measurement time [North: +, South: -] |
| 8 | Bottom depth | m | f6.1 | Set to be "0" if there is no data |
| 9 | Measurement depth | m | f7.2 | Depth of measurement layer |
| 10 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 11 | Current speed (zonal) | m/sec | f8.4 | 5-minute average of zonal component of absolute velocity [Eastward: +] [Only good data of more than 120 count of ping correlation and more than 25 count of echo intensity were used for the average] |
| 12 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 13 | Current speed (meridional) | m/sec | f8.4 | 5-minute average of meridional component of absolute velocity [Northward: +] [Only good data of more than 120 count of ping correlation and more than 25 count of echo intensity were used for the average] |
| 14 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 15 | Current speed (vertical) | m/sec | f8.4 | 5-minute average of vertical component of absolute velocity [Upward: +] [Only good data of more than 120 count of ping correlation and more than 25 count of echo intensity were used for the average] |
| 16 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 17 | Speed of absolute velocity | m/sec | f7.4 | Magnitude of absolute velocity |
| 18 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 19 | Current direction | degree | f5.1 | Current direction of absolute velocity [0 to 360] |
| 20 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 21 | Error velocity | m/sec | f8.4 | 5-minute average of error velocity |
| 22 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 23 | Correlation | count | f5.1 | 5-minute average by 4-beam average correlation(send beam - received beam) [max:250count] [The data used to calculate velocity were used to average] |
| 24 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 25 | Echo Intensity | count | f5.1 | 5-minute average by 4-beam average echo intensity [max:120count] [The data used to calculate velocity were used to average] |
| 26 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 27 | Percentgood | % | f5.1 | Rate of the good data that is used velocity calculation to the all data [0 to 100] |
| 28 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| 29 | Ship's speed | m/sec | f7.4 | Ship's speed by GPS |
| 30 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| *31 | Standard deviation of the Ship's Speed | m/sec | f5.2 | Standard deviation of the Ship's Speed in the 5-minute |
| 32 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| *33 | Standard deviation of the Ship's Heading | degree | f6.2 | Standard deviation of the Ship's Heading in the 5-minute |
| 34 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| *35 | Standard deviation of the Ship's Roll | degree | f5.2 | Standard deviation of the Ship's Roll in the 5-minute |
| 36 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |
| *37 | Standard deviation of the ship's pitch | degree | f5.2 | Standard deviation of the ship's pitch in the 5-minute |
| 38 | Quality flag | i1 | | "0"=good, "4"=questionable, "8"=bad |

* Standard deviations of the ship's speed and the ship's heading, roll, and pitch in each 5-minute average section are also included in the dataset, since data quality of ADCP velocity might be dropped due to the high variabilities of each variables. However, DMO doesn't make any evaluation for the ADCP data by them.



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Period: 2014-06-14 - 2014-06-17

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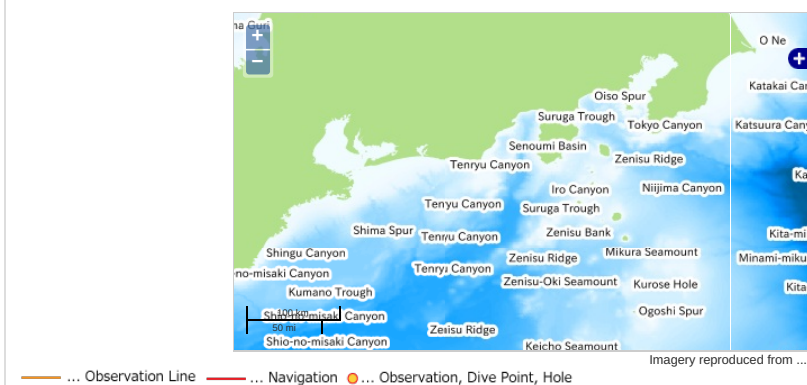
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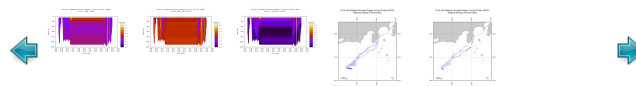
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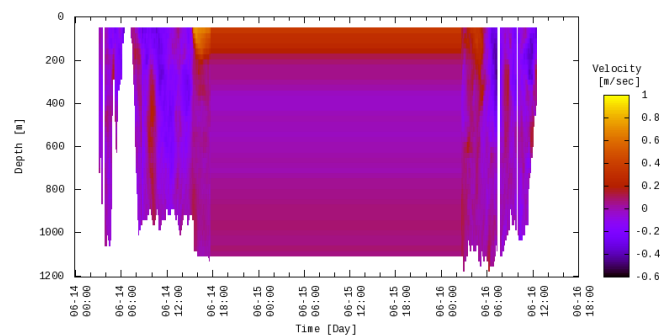
Observation Map



Figures



KY14-08: Shipboard Acoustic Doppler Current Profiler (ADCP)
Current speed (zonal)



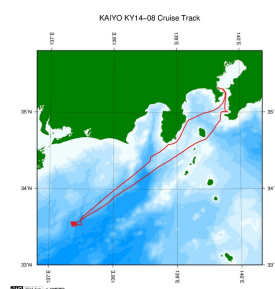
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File names

☐ KY14-08.txt

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