

For Using Data

| | |
|------------------------|--|
| Data Policy | JURCAOS-JAMSTEC |
| Principal Investigator | Data Management Office |
| Use Constraints | See Terms and Conditions about constrain of use. |
| Data Citation | See Terms and Conditions about data citation. |

Quality level

Processed (DMO)-QCed

Instrument

Radio navigation system

NO IMAGE

Overview

The following information is continuously collected and recorded as the Navigation QCed data during the cruise of R/V HAKUHO MARU.

Location
 Meteorological elements
 Surface temperature
 Current direction and velocity
 Water depth

System

Data are recorded every one minute, and data file named after cruise code.

Manufacturer: Clover Tech
 Model: DL1800

Sensor specifications

1) GPS receiver

Manufacturer: Trimble Navigation Limited
 FURUNO ELECTRIC CO., LTD.
 Model: SPS356
 GP-170

Receiver location:

2) Seawater Temperature

Manufacturer: Murayama DENKI Ltd.
 Model: RK(C)
 S/No.: 084.2
 Measurement range: -10 ~ +40°C
 Accuracy: +/-0.5%
 Sensor location: Outer Panel [port side] (near Fr.64)

3) Doppler sonar

Manufacturer: FURUNO ELECTRIC CO., LTD.
 Model: DS-60
 Range: Ship speed: -10.00 - +40.00knot [Cross direction]
 -9.99 - +9.99knot [Horizontal direction]
 Current direction and speed: 0.0 - 9.9knot [All direction]
 Accuracy: Water tracking: +/-1.0% or +/-0.1 knot, whichever is greater

4) Multi narrow beam echo sounder

Manufacturer: Kongsberg Maritime
 Model: EM124
 Frequency: 12kHz
 Range: 20m - 11,000m

5) Single beam echo sounder

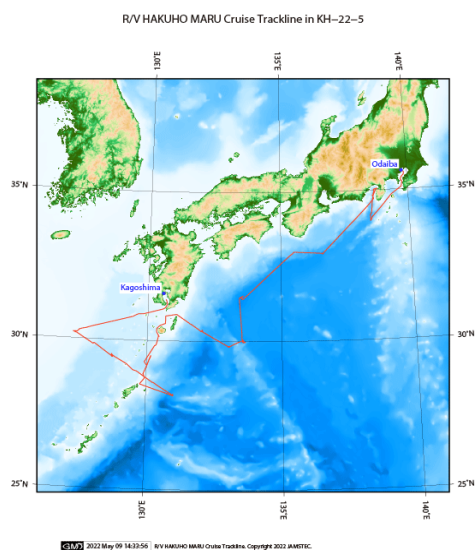
| | | |
|---------------|----------------------------------|-------------------------|
| Manufacturer: | Kongsberg Maritime | |
| Model: | EA600 | |
| Frequency: | 12kHz | |
| 6) Anemometer | | |
| Manufacturer: | NIPPON ELECTRIC INSTRUMENT, INC. | |
| Model: | N-162A | |
| Altitude: | 17m | |
| Range: | Wind direction: | all direction |
| | Wind speed: | 2 - 60m/s |
| Accuracy: | Wind speed: | +/- 0.5m/s (less 10m/s) |
| | | 10m/s or more +/-5% |

Note

Please see the 'data set' and 'readme' for the detail of the following observation.

| | |
|------------------------------|--|
| Water depth: | Bathymetry (MBES) |
| Current direction/ speed: | Shipboard Acoustic Doppler Current Profiler (ADCP) |

Related Information



KH-22-5

Ship Name:

HAKUHO MARU

Period:

2022/03/06 - 2022/03/17

Chief Scientist:

Hiroaki Saito (The University of Tokyo)

Proposal:

Biological oceanographic research cruise for testing observation tools

Format Description for QCed Data of Navigation

The one record of this data has 117 bytes of data part and 12 bytes of flag part.

Data part

| No. | Column | Content | Format | Unit | Remarks |
|-----|-----------|------------------------------|---------------|-----------------|--|
| 1 | 1 - 8 | Date | i4,i2,i2 | | YYYYMMDD (UTC) |
| 2 | 10 - 15 | Time | i2,i2,i2 | | hhmmss (UTC) |
| 3 | 17 - 19 | Datum | a3 | | W84:WGS84 TD_:TOKYO DATUM |
| 4 | 21 - 31 | Latitude | i2,x1,f7.4,a1 | degree - minute | dd-mm.mmmmmN(S) |
| 5 | 33 - 44 | Longitude | i3,x1,f7.4,a1 | degree - minute | ddd-mm.mmmmmE(W) |
| 6 | 46 - 49 | Ship speed(Ground) | f4.1 | knot | |
| 7 | 51 - 55 | Course(Ground) | f5.1 | degree | |
| 8 | 57 - 60 | Ship speed(Water) | f4.1 | knot | *1 |
| 9 | 62 - 66 | Gyro | f5.1 | degree | |
| 10 | 68 - 72 | Air temperature | f5.1 | deg-C | |
| 11 | 74 - 78 | Sea surface temperature(SST) | f5.2 | deg-C | |
| 12 | 80 - 85 | Atmospheric pressure | f6.1 | hPa | Adjusted to the sea surface level |
| 13 | 87 - 89 | Relative humidity | i3 | % | |
| 14 | 91 - 93 | True wind direction | i3 | degree | Averaged over the previous 6 seconds *2 |
| 15 | 95 - 98 | True wind speed | f4.1 | m/sec | Averaged over the previous 6 seconds *2 No anemometer height adjustment |
| 16 | 100 - 106 | Depth | f7.1 | m | |
| 17 | 108 - 112 | Current direction | f5.1 | degree | Calculated value |
| 18 | 114 - 117 | Current speed | f4.1 | knot | Calculated value |

Flag part

| No. | Column | Content | Format | Remarks |
|-----|--------|---------|--------|---|
| 19 | 119 | Flag 1 | i1 | QC flag for 'Latitude' and 'Longitude' |
| 20 | 120 | Flag 2 | i1 | QC flag for 'Ship speed (Ground)' |
| 21 | 121 | Flag 3 | i1 | QC flag for 'Course (Ground)' |
| 22 | 122 | Flag 4 | i1 | QC flag for 'Ship speed (Water)' |
| 23 | 123 | Flag 5 | i1 | QC flag for 'Gyro' |
| 24 | 124 | Flag 6 | i1 | QC flag for 'Air temperature' |
| 25 | 125 | Flag 7 | i1 | QC flag for 'Sea Surface Temperature (SST)' |
| 26 | 126 | Flag 8 | i1 | QC flag for 'Atmospheric pressure' |
| 27 | 127 | Flag 9 | i1 | QC flag for 'Relative humidity' |
| 28 | 128 | Flag 10 | i1 | QC flag for 'Wind direction' and 'Wind speed' |
| 29 | 129 | Flag 11 | i1 | QC flag for 'Depth' |
| 30 | 130 | Flag 12 | i1 | QC flag for 'Current direction' and 'Current speed' |

*1 The plus and minus sign of No.8 [Ship speed (Water)] about R/V KAIREI indicates the velocity of direction of a bow and stem.

*2 No.14 [True wind direction] and No.15 [True wind speed] about R/V SHINSEI MARU are instantaneous value.

* The terminator of each record is 'CR+LF' code.

* Missing value and format error value are filled with '9'.

Definition of Quality Control Flags

Flag 1 : Longitude and Latitude

- 1 - accepted
- 2 - questionable value
- 4 - failed in location check
- 9 - system error or input error

Flag 2 : Ship speed (ground)

- 1 - accepted
 - 2 - questionable value
 - 4 - failed range check (under 20 knots)
 - 9 - system error or input error
- Flag 3 : Course (ground)
- 1 - accepted
 - 2 - questionable value
 - 4 - failed range check (0 ~ 360 degree)
 - 9 - system error or input error
- Flag 4 : Ship speed (water)
- 1 - accepted
 - 4 - failed range check (under 20 knots)
 - 9 - system error or input error
- Flag 5 : Gyro
- 1 - accepted
 - 4 - failed range check (0 ~ 360 degree)
 - 9 - system error or input error
- Flag 6 : Air temperature
- 3 - assumed good*
 - 4 - failed range check (-20 ~ 40 degC)
 - 9 - system error or input error
- Flag 7 : Sea surface temperature
- 3 - assumed good*
 - 4 - failed range check (-3 ~ 37 degC)
 - 9 - system error or input error
- Flag 8 : Atmospheric pressure
- 3 - assumed good*
 - 4 - failed range check (890 ~ 1040 hPa)
 - 9 - system error or input error
- Flag 9 : Relative humidity
- 3 - assumed good*
 - 4 - failed range check (0 ~ 100 %)
 - 9 - system error or input error
- Flag 10 : Wind direction and wind speed
- 3 - assumed good*
 - 4 - failed range check (0 ~ 360 degree : wind direction, 0 ~ 60 m/s : wind speed)
 - 9 - system error or input error
- Flag 11 : Depth
- 3 - assumed good*
 - 4 - failed range check (4 ~ 11000 m)
 - 9 - system error or input error
- Flag 12 : Current direction and current speed
- 3 - assumed good*
 - 4 - failed range check (0 ~ 360 degree : current direction, 0 ~ 5 knots : current speed)
 - 9 - system error or input error

* 'assumed good' means that this data passed range check but may contains leap or inappropriate zero.