

## For Using Data

|                        |  |
|------------------------|--|
| Data Policy            | 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

Raw

## Instrument

Doppler radar (MR14-04 Leg1 -)



## Measurement System

- 1) Doppler radar
 

|                               |                                  |
|-------------------------------|----------------------------------|
| Manufacturer :                | TOSHIBA CORPORATION              |
| Type :                        | TW4419A                          |
| Frequency :                   | 5370MHz (C-band)                 |
| Transmitter :                 | Solid-state transmitter          |
| Pulse configuration :         | Using pulse-compression          |
| Polarimetry :                 | Horizontal and vertical          |
| Peak power :                  | 6kW(H) + 6kW(V)                  |
| Antenna diameter :            | 4m                               |
| Beam angle :                  | 1.0 degree                       |
| Location (from sea surface) : | 24m (center position of antenna) |
- 2) Inertial navigation system
 

|                               |            |
|-------------------------------|------------|
| Manufacturer :                | iXBlue SAS |
| Type :                        | PHINS      |
| Location (from sea surface) : | 21m        |

## Parameter

## Surveillance Scan

|                                      |            |
|--------------------------------------|------------|
| Scan Interval [min] :                | 30         |
| Elevations [deg] :                   | 0.5        |
| Pulse width (short/long)[ $\mu$ s] : | 2 / 200    |
| Scan speed [deg/sec] :               | 18         |
| Pulse Repetition Frequency [Hz] :    | 400        |
| Sweep integration (Pulse /Ray) :     | 16 samples |
| Ray spacing [deg] :                  | 0.7        |
| Bin spacing [m] :                    | 150        |
| Max. range [km] :                    | 300        |

## Volume Scan

|                                       |                              |            |   |            |                              |            |
|---------------------------------------|------------------------------|------------|---|------------|------------------------------|------------|
| Scan interval [min] :                 | 6                            |            |   |            |                              |            |
| Elevations [deg] :                    | 0.5                          |            | 1.0, 1.8, 2.6, 3.4, 4.2, 5.1, 6.2, 7.6, 9.7, 12.2, 15.2 |            | 18.7, 23.0, 27.9, 33.5, 40.0 |            |
| Pulse width (short/long) [ $\mu$ s] : | 1 / 64                       |            | 1 / 32  |            | 1 / 32                       |            |
| Scan speed [deg/sec] :                | 18                           |            | 24  |            | 36                           |            |
| Pulse Repetition                      | dual PRF (ray alternative) * |            |   |            |                              |            |
| Frequency [Hz] :                      | 667                          | 833        | 938   | 1250       | 1333                         | 2000       |
| Sweep integration (Pulse /Ray) :      | 26 samples                   | 33 samples | 27 samples  | 34 samples | 37 samples                   | 55 samples |

|                     |     |     |     |
|---------------------|-----|-----|-----|
| Ray spacing [deg] : | 0.7 | 0.7 | 1.0 |
| Bin spacing [m] :   | 150 |     |     |
| Max. range [km] :   | 150 | 100 | 60  |

\* During this cruise, the data were measured with the dual-PRF mode. Therefore, unfolding of Doppler velocity was applied automatically.

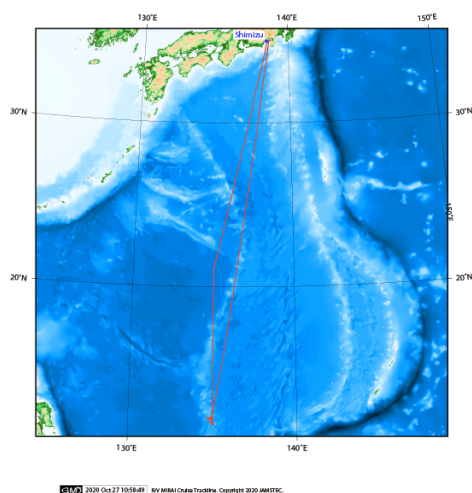
#### Note

If you would like the raw data set, please contact DMO at "dmo@jamstec.go.jp".

## Related Information

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R/V MIRAI Cruise Trackline in MR20-E01



### MR20-E01

Ship Name:

MIRAI

Period:

2020/08/01 - 2020/09/13

Chief Scientist:

Satoru Yokoi (JAMSTEC)

Proposal:

Study on air-sea interaction associated with the northward-propagating boreal summer intraseasonal oscillation

Observational study on variation of precipitation and vapor isotope ratio associated with MJO

Observational study for upper-ocean stratification: Case of tropical western Pacific

Observation of aerosol optical characteristics over the ocean

Measurement of column-integrated CO<sub>2</sub> density in the atmosphere

Continuous observation of precipitable water vapor using microwave radiometer

Study on impacts of aerosols on precipitation and lightning

Study on mechanisms for convective clustering associated with northward-propagating intraseasonal oscillation

Analysis of fine vertical structure of oceanographic parameters over the tropical western Pacific