Cruise Summary of MR10-02 Mirai cruise

1) Ship

R/V Mirai

2) Cruise ID

MR10-02

3) Title of the cruise

Tropical Ocean Climate Study/Operation of TRITON Buoy

With Public offering projects

Lidar observations of clouds and aerosols

Sampling of rainfall, atmospheric vapor, and seawaters

Sky radiometer

Milimeter wave radar and Infrared radiometer

Air-sea surface eddy flux measurement

Kuroshio air-sea interaction observations

Argo float launching

Geophysical surveys

4) Chief Scientist

Kentaro Ando

Research Scientist

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5) Representatives of science party and thema

5-1) Tropical Ocean Climate Study

Kentaro Ando

5-2) Operation of TRITON buoy

Yasuhisa Ishihara

5-3) Lidar observations of clouds and aerosols

(Lidar observations of optical characteristics and vertical distribution of aerosols and clouds)

Nobuo Sugimoto (National Institute for Environmental Studies)

5-4) Sampling of rainfall, atmospheric vapor, and seawaters

(Water sampling for building water isotopologue map over the Ocean)

Naoyuki Kurita (JAMSTEC)

5-5) Sky radiometer

(Maritime aerosol optical properties from measurement of Ship-borne sky radiometer)

Kazuma Aoki (University of Toyama)

5-6) Milimeter wave radar and Infrared radiometer

(Distribution and configuration of Clouds in various oceans)

Toshiaki Takano(Chiba University)

5-7) Air-sea surface eddy flux measurement

(On-board continuous air-sea eddy flux measurement)

Osamu Tsukamoto (Okayama University)

5-8) KEO, J-KEO, and Kuroshio air-sea interaction observations

(Observational research on air-sea interaction in the Kuroshio-Oyashio Extension region)

Yoshimi Kawai (JAMSTEC)

5-9) Argo float launching

(Study of ocean circulation and heat and freshwater transport and their variability, and experimental comprehensive study of physical, chemical, and biochemical processes in the western North Pacific by the deployment of Argo floats and using Argo data)

Toshio Suga (JAMSTEC)

5-10) Geophysical survey

(Standardising the marine geophysics data and its application to the ocean floor geodynamics studies)

Takeshi Matsumoto (Ryukyu University)

6) Period

April 6th, 2010 - May 3rd, 2010 (Guam, USA)

7) Ports of call

Sekinehama, April 6th, 2010

Hachinohe, April 7th, 2010

Koror (Palau), April 17th, 2010

Guam (USA), May 3rd, 2010

8) Observation area

Western Tropical Pacific Ocean

9) Observation summary

TRITON mooring recoveries and re-deployments: 6 moorings were deployed and recovered

JKEO and KEO: Visual check to J-KEO and repair to KEO

CTD (Conductivity, Temperature and Depth) and water sampling:	11 casts
XCTD:	81 casts
Sonde:	22 launchings
Current measurements by shipboard ADCP:	continuous
General Surface meteorology:	continuous
Lidar, rain sampling, turbulences, aerosol etc.:	continuous
Geophysical bottom survey:	continuous

Regarding TRITON buoy maintenance work, we recovered and re-installed nine buoys at 130E and 137/138E lines during this cruise without any big trouble. The so-called “Iron mask” meteorological tower has been used on the buoy at 8N130E, and the tower was not vandalized heavily in comparison with the past buoys with normal tower at this site.

During this cruise, we conducted 11 CTD casts for various purposes. For TRTION sensor check, CTD casts were conducted down to 1000m depth near the recovered buoy for the purpose to compare with TRITON salinity sensors which are installed from surface to the depth of 750m.