

Submission date: 2016/01/28

Cruise Summary

1. Cruise Information

Cruise ID: KY15-E04
Name of Vessel: R/V KAIYO
Title of the Cruise: Site Survey for IODP IBM Drilling Project, Northern Izu-Ogasawara Arc
(Retrieval of Mooring Systems)
Chief Scientist: Kan Aoike (Center for Deep Earth Exploration, JAMSTEC)
Representative of the Science Party: Kan Aoike (Center for Deep Earth Exploration, JAMSTEC)
Title of Proposal: Site Survey for IODP IBM Drilling Project, Northern Izu-Ogasawara Arc
Cruise Period: 13 -16 December 2015
Ports of Departure / Arrival: Yokosuka - Yokosuka
Research Area: Northern Izu-Ogasawara Arc

2. Overview of the Surveys

Objectives

This cruise was planned to retrieve two sets of mid-depth subsurface mooring system, CM-07 and CM-08, which were installed to Site IBM-4, about 55 km off the east of Aogashima Island for long term sea current observation in June 2014 during the YK14-10 cruise. The retrieval operation was supposed to have been completed during the KY15-15 cruise (4-11 Oct. 2015), however, it was cancelled due to rough sea condition. Site IBM-4 is a deep riser drilling site proposed for the International Ocean Discovery Program (IODP), about 1800 m in water depth, potentially drilled by D/V Chikyu in near future. Long term sea current observation data is one of operational site survey data required for safety assessments of riser drilling, especially for assessment of riser behavior in high current conditions (riser analysis). Since the IBM-4 is located in an area where the Kuroshio Current passes sometimes according to its meandering patterns, we installed the mooring systems to collect sea current data for more than a year (up to two years) for the riser analysis. The deployed mooring systems are about 1500 m in length and so designed as to situate the top buoys at about 300 m under low current conditions.

Activities

[13-14 December]

R/V Kaiyo departed the JAMSTEC quay of the Yokosuka headquarter on 13 December at 08:30 (JST), however, she went directly to the Sagami Bay off Hatsushima island for wait-on-weather (WOW). After 14 hours WOW, the vessel left the Sagami Bay on 14 December at

03:00 and started to sail toward the site off the east of Aogashima island. On the way to the site, multi-beam bathymetry survey was carried out along the approach route in the northwestern part of the proposed survey area. The vessel arrived near upstream the first site, CM-07, on 14 December at 23:40.

[15 December]

We started preparation to retrieve the mooring system from 06:35 on 15 December. The release command was sent to a releaser at 06:59. The top buoy surfaced at 07:02 and the last set of glass floats came on surface at 07:19. The whole CM-07 mooring system was successfully recovered at 09:20 (releaser on deck). The vessel moved to CM-08 immediately and arrived near the site upstream at 09:45. The release command was sent to a releaser at 09:59. The top buoy surfaced at 10:02 and the last set of glass floats raised to surface at 10:16. The whole CM-08 mooring system was successfully recovered at 12:09 on 15 December (releaser on deck). The vessel started to sail back to Yokosuka immediately after completion of the mooring recovery operations. On the way, bathymetry survey with the multi-beam system was carried out again along the return route in the northwest side of the survey area.

[16 December]

The vessel arrived off the JAMSTEC Yokosuka Headquarter at 04:55 and got alongside the quay at 09:00 on 16 December.