

Cruise Summary

1. Cruise Information

- (1) Cruise ID : KM17-13
- (2) Name of vessel : Research Vessel *Kaimei*
- (3) Title of the cruise : Training cruise for Boring Machine System (BMS)
- (4) Chief scientist : Fujio Yamamoto [JAMSTEC]
- (5) Cruise period : 2017/12/3 ~ 12/10
- (6) Ports of departure / arrival : JAMSTEC / JAMSTEC
- (7) Survey area : Off Highashi-Aogashima, Nankai Trough North

2. Overview of the Observation

- (1) Training for launch and recovery of BMS

To understand and practice the launch and recovery procedure for BMS was safely conducted during mobilization and KM17-03 cruise. How to secure the BMS during launch and recovery was confirmed.

- (2) Operation training of the BMS

Communication with the BMS from a control van and equipment test installed on the BMS were conducted. Understanding the drilling tools equipped with the BMS and drilling (coring) were also conducted. Rock core samples were finally gathered in the Off Higashi-Aogashima.

- (3) Ship's control during the survey

Ship control while tracking the BMS during operation was confirmed.

- (4) Equipments onboard the R/V *Kaimei*

Analysis equipments installed at the No.3 laboratory and container laboratory were used and checked based on the onboard sample processing flow during core sample measurements.

During the BMS operation, acoustic navigation system was used to measure the geo-graphic position and depth of the BMS. Cable transponder attached on the BMS cable above 100 meters of the BMS was used to understand the catenary of the BMS cable while BMS was drilling.

- (5) Check the BMS operation manual.

BMS operation manual was checked and was modified if it was required.

- (6) Site survey for the proposed drilling site

Bathymetric and sub-bottom survey were conducted in the proposed drilling site. KM-ROV was also used to watch the seafloor if there is artificial thing or not. Finally, rock samples were collected to understand the seafloor type. Suitable drilling tools were selected based on the results of these samples.