Cruise Summary

## 1. Cruise Information

(1) Cruise ID：KM17-09

(2) Name of vessel：Research Vessel KAIMEI

(3) Title of the cruise：Preliminary Report of the R/V KAIMEI Cruise KM17-09

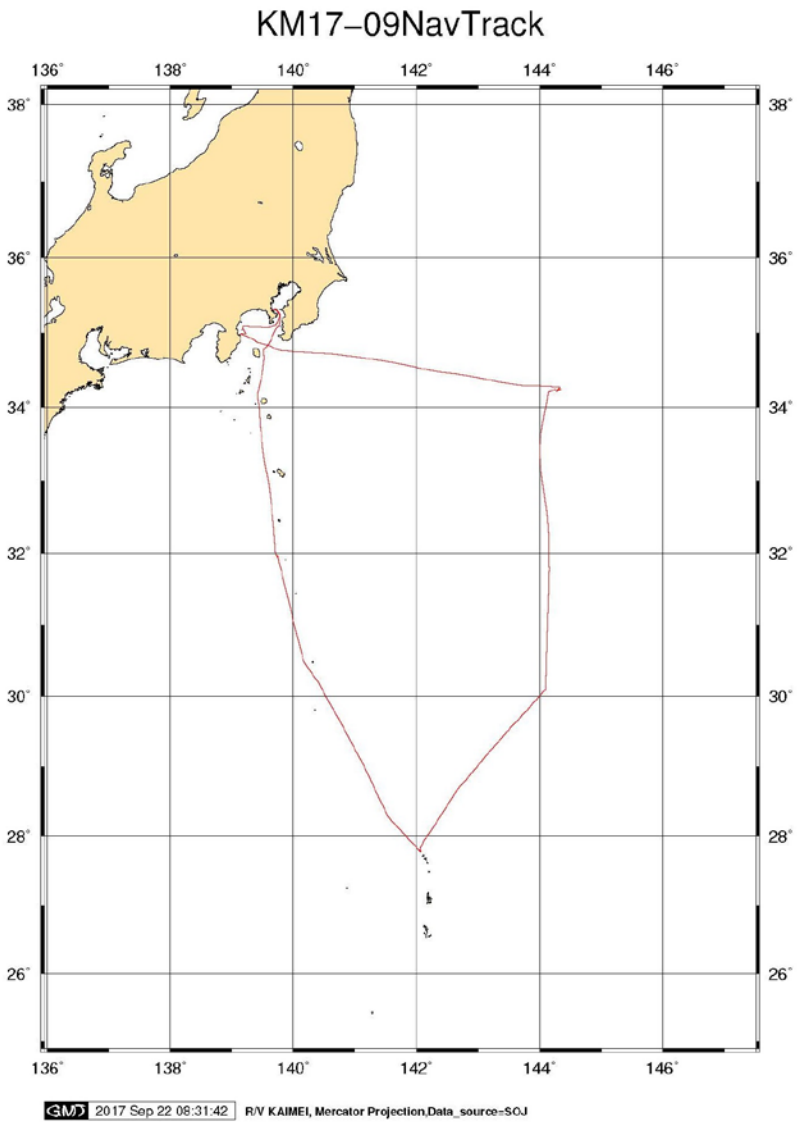
(4) Chief scientist：YANAGITANI, Masanobu

[JAMSTEC/Marine Technology and Engineering Center]

(5) Cruise period：September 13-22, 2017

(6) Ports of departure / JAMSTEC ～ JAMSTEC

(7) Research area：Sagami Bay, Takuyou Daisan Seamounts, Bayonnaise Knoll




## 2. Overview of the Observation

(1) Outline of implementation

Performance confirmation of the AutoTrack function of KM - ROV and practice training of the Boring Machine System (BMS) were carried out.

(2) Implementation content

① Confirmation of KM-ROV AutoTrack function

Scenario assumed We conducted performance confirmation tests on SSBL acoustic positioning data used for the purpose of improving precision, trial running, and Doppler Velocity Logs (DVL) mounted on the vehicle.

② Boring Machine System (BMS) practice training

・Confirm method and procedure of excavation preliminary survey

In the overview by the multi-beam echo sounder and sub bottom profiler of the ship bottom equipment, the topography around the excavation point, the back scattering image data, and the surface profile were recorded. After that, we conducted a survey of the seabed surface condition by KM - ROV which is always onboard in *"Kaimei"*, confirm the topographical undulation of the points to be actually seated, select the place, check the presence or absence of obstacles by the camera, estimated rock formations were identified and sampled. From a series of preliminary surveys, we confirmed that these preliminary survey methods and procedures are effective in excavation work by BMS.

・Confirmation of launch / recovery operation

Lifting of BMS through docking head, routing of A-frame crane, launch and recovery training. Also, I checked the procedure of the anti-stepping cord.

・BMS operation check and pilot operation training

Communication confirmation and confirmation of operation of each equipment of BMS were carried out. In addition, we understood the characteristics of the equipment and succeeded in collecting rock core samples through actual drilling work. We also confirmed the oversea confirmation, and also checked the shift team's watch system.

・Confirmation of BMS operation manual

We carried out operations in accordance with the operation manual and confirmed necessary procedures and cautions at each stage.

③ Operation of *"Kaimei"*

We confirmed cooperation with Boring maneuvering in accordance with work situation, such as tracking and moving (towing) BMS during digging excavation, and cooperation with BMS control container. Also, we confirmed overwhelming regime of the crew by carrying out the overnight confirmation.

④ Confirmation of research equipment

For the equipment installed in the 3rd laboratory and the container laboratory and the

carry-in research equipment, onboard processing flow was confirmed using the rock core samples actually sampled by BMS.

⑤ Operation check of fixed of observation device on *"Kaimei"*

Recording of XBT, MBES, ADCP, SBP data necessary for preliminary investigation of BMS, operation confirmation of the positioning device necessary during operation was carried out. We also conducted continuous observation of atmospheric and oceanic observation instruments.