Cruise Summary

1. Cruise Information

- (1) Cruise ID: KM24-09
- (2) Vessel: R/V KAIMEI
- (3) Cruise Title

BMS drilling Part 1 at Higashi Aogashima Knoll Caldera hydrothermal field to unraveling the gold enrichment mechanism at subseafloor

(4) Chief Scientist

Tatsuo Nozaki (JAMSTEC)

(5) Representative of the Science Party

P24-02 Tatsuo Nozaki (JAMSTEC)

JC24-07 Takafumi Kasaya (JAMSTEC)

(6) Research Titles

P24-02 BMS drilling Part 1 at Higashi Aogashima Knoll Caldera hydrothermal field to unraveling the gold enrichment mechanism at subseafloor

JC24-07 In-situ exposure test of the concrete material at deep seafloor

(7) Cruise Period

2024/08/23 - 2024/09/08

(8) Ports of departure/call/arrival

Yokosuka - Yokosuka

(9) Research Area

Higashi Aogashima Knoll Caldera hydrothermal field

(10) Cruise Track



Ship track 1: Entire ship track during the cruise KM24-09



Ship track 2: Ship track around Higashi Aogashima Island during the cruise KM24-09

2. Overview of the Observation

The cruise KM24-09 was performed at the Higashi Aogashima Knoll Caldera hydrothermal field, Izu-Bonin Arc from 23rd August to 8th September 2024. Since the main purpose of this cruise was seafloor drilling by using BMS (benthic multicoring system), we conducted preliminary survey as well as sampling at Central Cone Site and East Site at the first three dives. Then, we tried to the first BMS drilling at Central Cone Site, however, there were some troubles with BMS and floats of BMS were damaged during the lifting and retrieving to deck, the BMS drilling operation of this cruise was given up.

After the escaping from the 10th typhoon (Shanshan) and repairment of ROV and BMS at the Hachijo-jima Island offshore, the sea state was really calm and ROV dives were performed everyday from 2nd to 7th September. Owing to focusing on the observation at topographical and geophysical unique points with longer tracks than usual to observe seafloor, we successfully found 8 mound and chimney swarms. Especially, mound and chimney swarm distributed at 100 m width at South of East Site and big chimney swarm whose relative height is 15 to 25 m were discovered in this cruise. Moreover, we obtained lots of samples of rock, hydrothermal fluid, seawater and microbe, and it is expected that gold enrichment mechanism at the Higashi Aogashima Knoll Caldera hydrothermal field will be elucidated more.