

Preliminary results of the CK16-01 Cruise: Scientific drilling operations of coring, in-situ thermometer and geothermal logging tool

*Tatsuo Nozaki¹, Jun-ichiro Ishibashi², Hidenori Kumagai¹, Lena Maeda³, CK16-01 Cruise members

1.Research and Development (R&D) Center for Submarine Resources, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2.Faculty of Science, Kyushu University, 3.The Center for Deep Earth Exploration, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

The CK16-01 Cruise by D/V Chikyu was performed at the Iheya-North Knoll and Noho Site, middle Okinawa Trough from 11th, February to 17th, March 2016 in order to investigate the subseafloor hydraulic structure and geology, aiming to construct the genetic model of seafloor hydrothermal deposits. In the first half of the CK16-01 Cruise, logging while drilling (LWD) was mainly done to obtain physical parameter beneath the Iheya-North Knoll and Noho Site, as well as install of the "Kuroko-ore cultivation apparatus" equipped with sensor loggers to monitor the secular changes of pressure, temperature, flow rate and precipitation weight within the Kuroko-ore cultivation apparatus on artificial hydrothermal vents. This Kuroko-ore cultivation apparatus will be recovered after one year by ROV Kaiko Mk-IV. In the latter half of the CK16-01 Cruise, the main operation was coring to obtain drilled core sample together with temperature measurement by in-situ thermometer and borehole logging after coring operation using a geothermal tool bearing pressure, temperature, flow rate and gamma-ray sensors. In this presentation, we report the preliminary results of operations during the latter half of the CK16-01 Cruise.

Keywords: Okinawa Trough, Iheya-North Knoll, Noho Site, seafloor hydrothermal deposit, Kuroko deposit, CK16-01 Cruise