

Preliminary results of the CK16-01 Cruise: Scientific drilling in Okinawa Trough using Logging While Drilling tools and installation of long-term monitoring apparatus

*Hidenori Kumagai¹, Tatsuo Nozaki¹, Jun-ichiro Ishibashi², Lena Maeda¹, CK16-01 Cruise Member¹

1.Japan Agency for Marine-Earth Science and Technology, 2.Kyushu Univ.

In the period of February to March of 2016, the CK16-01 Cruise by D/V Chikyu was performed at the Iheya-North Knoll and Iheya Minor Ridge in middle Okinawa Trough, in order to investigate the subseafloor hydraulic structure and geology, aiming to construct the genetic model of seafloor hydrothermal deposits under an umbrella of Cross-ministerial Strategic Innovation Promotion Program (SIP). In the former half of the cruise, logging while drilling (LWD) operation was mainly performed to obtain physical parameters beneath both the area, as well as to install of the Long-term monitoring apparatus, "Kuroko-ore cultivation apparatus", equipped with sensors to monitor the secular variation of pressure, temperature, flow rate and precipitation weight within the apparatus on hydrothermal vents artificially made. The precipitation volume of the apparatus will be recovered later to by ROV. In the latter half of the 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 former half of the CK16-01 Cruise.

Keywords: Okinawa Trough, Iheya-North Knoll, Iheya Minor Ridge, Seafloor hydrothermal Deposit, CK16-01 Cruise, Cross-ministerial Strategic Innovation Promotion Program (SIP)