

Preliminary results of the CK16-05 Cruise: Scientific drilling in Okinawa Trough of coring, logging using geothermal tool and refit of Long-term monitoring apparatus

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The CK16-05 Cruise by D/V Chikyu was performed at the Izena Hole and Iheya Minor Ridge, in the middle Okinawa Trough from November 16th to December 15th, 2016. Aiming to construct the genetic model of seafloor hydrothermal deposits, the subseafloor polymetallic sulfide ore body and relevant geology were investigated under an umbrella of Cross-ministerial Strategic Innovation Promotion Program (SIP). Throughout the cruise, systematic coring partly coupled with logging using a geothermal tool were conducted at the Hakurei Site, Izena Hole. Within the five of the eight sites, massive sulfide ore-bodies were successfully drilled and sampled. Owing to an improved sampling tool, a hydraulic piston-coring system modified to adjustable (short) penetration, the transition zones from sediments to ore bodies were continuously sampled without significant disturbances. The continuous profiles of natural gamma-ray together with borehole temperature and pressure were also obtained at the half of the holes. In the middle of the cruise, installation of a revised long-term monitoring 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 as Hole C9017A at the very vicinity of the last installation at the Hole C9017B, at Noho site, in the south of Iheya-Minor Ridge.

In this presentation, we report the preliminary results of operations conducted in the CK16-05 Cruise.

Keywords: Izena Hole, Systematic sampling of sulfide minerals, Natural gamma ray, Long term monitoring