

Geologic structures of Iheya north Knoll Hydrothermal area, middle Okinawa Trough

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Iheya Ridge, located on middle Okinawa Trough, is one of the most active hydrothermal areas in Japan. Since discovery of hydrothermal vent at Clam site in 1986, many hydrothermal vents and seeps have been identified on and around the ridge. Geographical, geochemical, geothermal, microbiological researches have been carried out, however, there were no study based on detailed seismic survey enough to argue geological structure of this area. It is likely that distribution of hydrothermal vents and seeps are concerned with geological structure. Then we tried single channel seismic survey in Iheya north Knoll to reveal geological structure of this area.

As a result, we couldn't find out passage of hydrothermal fluid because of acoustic homogeneity of the knoll which seems to be consist of volcanic and volcanoclastic rocks. Although, we identified two types of characteristic structures which suggests presence of gasses. They are acoustic transparent area and pipe structures.