

Detailed Topographic survey on basin areas of the Japan Sea and around Hokkaido

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Regional bathymetric and backscatter data were obtained by a multibeam echo sounder (MBES) and a sub-bottom profiler (SBP) in 10 promising basin areas of the Japan Sea and around Hokkaido, for estimation of shallow methane hydrate resources. Survey was conducted on basin areas between West of the Oki Island and the Okushiri Basin of Japan Sea, and in the Hidaka Trough, off Tokachi and off Abashiri area around Hokkaido, using EM302 and TOPAS PS18 of Kongsberg, during the 7K13(43 days), 7K14(62 days) and 7K15(75 days) Cruises of R/V Kaiyo-maru No.7 (Matsumoto et al., 2014, Matsumoto and Satoh, 2015). Topographic shade maps are produced from obtained bathymetric data, and many topographic features concerning sedimentary processes, such as cliffs, slide sheets, submarine channels, are recognized in the survey areas.

Many sets of submarine slide sheet and adjacent cliff are observed in West of the Oki Islands and the Oki Trough areas, and no major submarine channels are found in these areas. In the southwest part of Oki Trough, almost of all trough floor are occupied by a large number of slide sheets. Although several number of slides are found, large submarine channels, flat basin floor are observed, and many topographic highs formed by tectonic inversion (Okamura et al., 1996a, b) are distributed in the Toyama Trough and the Mogami Trough area. Many sets of cliffs and slide sheets are found in the slopes of western and northeastern margin of the Hidaka Trough, and with no major submarine canyons. Two remarkable submarine channels are observed and topographic highs are extended from south to north between two channels off Abashiri area in the Okhotsk Sea.

This study was conducted as a part of the shallow methane hydrate exploration project of METI.

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