

Resource assessment of shallow gas hydrate of Japan Sea: Overview and Preliminary Results of 2013-2015 METI Project

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It had been well documented that shallow gas hydrates occur as a nodular to bedded form of a few cm to a few meters in the hydrate mound, the upper part of gas chimney structure (acoustic blanking zone) along the eastern margin of Japan Sea (e.g., Matsumoto et al., 2005, 2012). On the basis of the Basic Act on Ocean Policy (approved by the Cabinet on April 2013), METI launched 3 years project to assess the resource potential of the shallow gas hydrates in Japan Sea. Gas hydrate laboratory of MU has conducted a regional bathymetric and geologic survey, drilling survey, environmental assessment survey etc. as AIST's sub-commissioned project. Regional survey has focused on regional mapping of potential hydrate-bearing structures by means of MBES and SBP systems along the eastern margin of Japan Sea and around Hokkaido Island, and confirmed 1742 hydrate mounds with gas chimney in 3 years. LWD drilling and pressure coring on selected hydrate mounds and gas chimneys successfully identified gas hydrate concentration zones characterized by high sonic velocity, high resistivity, low natural gamma ray etc, and finally recovered hydrate-bearing sediments including more than several meters thick, massive and bedded pure gas hydrates for the first time in the world. A number of ROV dives observed sea floor manifestations of methane seeps, outcrops of a few meter thick hydrate beds and crater-like depressions formed by a collapse of massive hydrates. Long term monitoring of benthic environments have been also performed under this project. Preliminary results as to the resource assessment will be discussed in the presentation. This study was conducted as a part of the shallow methane hydrate exploration project of METI. We express sincere thanks to personnel from the AIST, JOGMEC and allied Universities and Institutes for their participation in long term sea-going expedition and laboratory experiments.

Matsumoto, R. 2005. Methane plumes over a marine gas hydrate system in the eastern margin of Japan Sea. ICGH-5, Trondheim, 749-754.

Matsumoto, R., et al., 2012, Distribution of shallow gas hydrates in Japan Sea: Press Release and Lecture, Oct 25, Meiji Univ.

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