

High-resolution Seafloor Survey and Preliminary Geochemical Investigations in the Daini-Atsumi Knoll.

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In 2012 JFY, the first offshore methane hydrate production test in the world will be conducted around the Daini-Atsumi Knoll in the eastern Nankai Trough.

Geohazard surveys are required to deepwater drillings in oil and natural gas industry, therefore, a high-resolution bathymetric and geological survey was conducted by the AUV 'Urashima' in the Daini-Atsumi Knoll in February, 2011.

The acquired data are as follows;

- (1) High-resolution bathymetric data by multi-narrow beam echo sounder
- (2) High-resolution back-scatter image by side scan sonar
- (3) High-resolution shallow sediment profile by sub-bottom profiler

Resultingly remarkable hazards are not identified around the production test area.

Nagakubo et al. (2009) constructed the bathymetric and seafloor amplitude maps of the Daini-Atsumi knoll by the seafloor reflection signals of the 3D seismic data acquired in the METI 3D seismic survey 'Tokai-oki to Kumano-Nada'. Furthermore a lot of geochemical data near on seafloor were acquired by the Research Consortium for Methane Hydrate Resources in Japan (MH21).

This presentation will show (1) Comparison of the AUV 'Urashima' and the 3D seismic data concerning the bathymetry and seafloor geological conditions, (2) Preliminary investigations concerning the geological and geochemical conditions of the Daini-Atsumi Knoll.

Reference

Nagakubo S., Kobayashi T., Saeki T., Shimoda N., Fujii T. and Noguchi S. (2009): The Relations between Methane Hydrate-bearing Formations and Seafloor Manifestations Accompanied by Methane Discharges in the Eastern Nankai Trough, *Journal of Geography*, 118(5), 835-853. (in Japanese with English abstract)

Keywords: AUV 'Urashima', methane hydrate, Daini-Atsumi Knoll, bathymetric survey