

## Understandings of seafloor manifestations utilized by 3D seismic data around Tenryu knolls

# Sadao Nagakubo[1]; Toshiaki Kobayashi[2]; Manabu Tanahashi[3]

[1] JOGMEC; [2] JOGMEC TRC; [3] Geological Survey of Japan, AIST

We produced high resolution bathymetric and seafloor reflection intensity maps around Tenryu knolls in the eastern Nankai Trough by re-processing data of 3D seismic surveys which were conducted in FY2002. We analyzed the relationship between methane-bearing fluids, hydrate bearing-zones and seafloor manifestations by comprehensive interpretations of high resolution bathymetric maps, seafloor reflection intensity maps and seismic sections.

Some pockmark-like features were recognized on the high resolution bathymetric maps. Possible ascent gas was recognized below one of pockmarks in seismic sections. As seafloor manifestations by release of methane-bearing fluids are expected around the pockmark, seafloor surveys in near future are required to interpret the relationship.

Some areas on the seafloor reflection intensity maps show high amplitude. These areas may correspond to the distribution of carbonate which was precipitated in shallow subsurface. Subsurface faults were recognized on the seismic sections below most of strong amplitude areas. Methane-bearing fluids may migrate from around the bottom of hydrate stability zone to seafloor through subsurface faults.

Research Consortium for Methane Hydrate Resources in Japan (MH21) has been conducting seafloor surveys to interpret the relationship between methane hydrate bearing-zones and seafloor manifestations since FY2002. The bathymetric and seafloor reflection intensity maps produced in this study would be one of the guide maps for future seafloor surveys.