

## Structures of the sediments and strata on the offshore Joban shelf: Drilling to decipher cooling transition in Late Pliocene

# Koichi Hoyanagi[1]; Yasuyuki Nakamura[2]; Yoshitaka Nagahashi[3]; Katsura Kameo[4]; Katsura Ishida[1]; Aya Hatanaka[1]; Yuka Yoshiuchi[1]; Yukio Yanagisawa[5]

[1] Geology, Shinshu Univ.; [2] Ocean Res. Inst., Univ. Tokyo; [3] Fukushima Univ.; [4] ORI, Univ. Tokyo; [5] Geological Survey of Japan / AIST

Climate in the middle part of Pliocene (3.8-3.0 Ma) is considered to be warmer than today, and on set of global cooling and glaciations occurred in Late Pliocene. Climate and sea-level changes are successively recorded in upper Miocene to Pleistocene strata on the Joban shelf, where is situated north western margin of the Pacific Ocean. We got seismic profiles and some piston cores from this area by the cruise of R/V Tansei-maru in 2008.

The piston cores are composed of Holocene sediment and underlying Pliocene rocks. Holocene sediment yields abundant diatom fossils and they indicate influence of warm current. While, Pliocene rock also yields diatom fossils, which indicate the age of 2.4-2.0 Ma and influence of cold-water mass. Upper Pliocene rocks on land area (3.0-2.7 Ma) yield cold-water diatom fossils. Large submarine canyons with submarine land-slide were formed in around 2.7 Ma. Therefore, Cooling of the Ocean currents occurred earlier than sea-level fall.