

Mid to Late Pleistocene paleoceanographic history of the northern East China Sea based on radiolarian data (IODP Exp. 346 Site U1429)

\*Kenji M. Matsuzaki<sup>1</sup>, Takuya Itaki<sup>1</sup>

1.Geological Survey of Japan, AIST Marine Geology Research Group/ Institute of Geology and Geoinformation

The East China Sea (ECS), is a marginal sea, influenced by the East Asian Monsoon (EAM) and Kuroshio Current (KC). The hydrography of the northern part of this area is highly influenced by discharges of fresh water from the Yangtze River during summer lead by the East Asian summer monsoon. In summer-autumn 2013, the IODP Expedition 346 could retrieve sediments cores in the northern ECS from Site U1428 and U1429 in order to reconstruct the regional paleoceanographic history of this area, focusing on the interaction between East Asian Summer Monsoon, Yangtze River discharges and Kuroshio Current. On the other hand, radiolarians are micro-organism group bearing siliceous skeletons, widely distributed in the world ocean, living from shallow to deep water masses. In the ECS, few studies increase our knowledge's concerning radiolarian ecology and its relationship with temperatures changes. Therefore, we have investigated changes in radiolarian assemblages down core Site U1429 since the Mid- Pleistocene for clarify the fluctuation pattern in KC water and Yangtze River discharges through the Pleistocene glacial/interglacial climatic changes. We have also reconstructed past Summer Sea Surface Temperature based on shallow water radiolarians in order to discuss the possible interaction and impact of the EAM, Yangtze River discharges and KC on the regional hydrography

As a summarizing result, we identified that radiolarians related to Kuroshio Current waters, such as *T. octacantha* group and *D. tetrathalamus* were abundant at the MIS 1, MIS 5e and MIS 7, which caused a warming of the regional shallow water (>26 °C). During de-glacials, the abundances of radiolarians related to the Yangtze River discharges (e.g. *P. obeliscus* and *C. calvata*), drastically increased. During glacials, *L. setosa*, a species related to temperate coastal water dominated the assemblages involving a cooling of the shallow waters (between 21 and 22°C). Several changes could be also identified for the intermediate water during the studied time interval. We recorded high abundances in taxa related to subarctic water during glacials (MIS 2 and 6), while, intermediate water dwellers specific to the ECS show their higher abundances during interglacial (MIS 1, 5), excepting the MIS 6 and 7.

Keywords: East China Sea, Paleoceanography, Radiolarians