

The outline of the sandbar drilling in the lower reach of Yangtze (YD15) to reconstruct flood history

SAITO, Keita^{1*} ; TADA, Ryuji¹ ; ZHENG, Hongbo² ; IRINO, Tomohisa³ ; WANG, Ke³ ; LUO, Chao⁴ ; TSUNAZAWA, Yuya¹ ; SUGISAKI, Saiko¹

¹University of Tokyo, ²Nanjing Normal University, ³Hokkaido University, ⁴Nanjing University

East Asian Summer Monsoon (EASM) drives the hydrological cycle in East Asia, and its intensity and spatial pattern strongly affect lives of billions of people living there. Thus, it is important to investigate the behavior and controlling factors of EASM by reconstructing the spatiotemporal distribution of EASM precipitation in past. Climate in the drainage of Yangtze River is under the influence of EASM. It is known that there are positive correlation among precipitation, water discharge, and sediment yield (>90% is in the form of suspended particulate matter) in Yangtze drainage. Thus the provenance of the sediments discharged from the river mouth is thought to reflect the spatial distribution of EASM precipitation within the drainage.

To reconstruct the behavior of EASM during the late Holocene, the sediment cores covering the past 6000 years were recovered from the rivermouth area of Yangtze in 2013 (YD13). However, based on the analysis of Cs isotope, the uppermost part of the sedimentary sequence corresponding to the last 100 years was absent. Thus, to calibrate the relative contribution of sediments from the upper versus middle to lower reaches to the relative contribution of the water discharge from the upper versus middle to lower reaches, we need to retrieve the continuous sedimentary sequence covering at least the last 150 years. We plan to drill the active sandbar in the lower reach of Yangtze for this purpose (YD-15). The provenance of sediments in YD15 core covering the last 150 years will be analyzed and the result will be compared with the observational records of precipitation and water and sediment discharges. Preliminary result will be reported.