Deepwater circulation changes during the late Quaternary in the western Pacific Ocean based on Cd/Ca in benthic foraminifera

Katsunori Kimoto [1], Yukio Kodama [2], Kiminori Shitashima [3], Asahiko Taira [4]

[1] ORI, Univ. Tokyo, [2] ORI, Univ. of Tokyo, [3] CRIEPI, [4] Ocean Research Institute, Univ. of Tokyo

Detailed Cd/Ca ratios of benthic foraminifera were measured in 8 piston cores from the western Pacific and the Southern Ocean during the last 150,000 years. The western Pacific Cd/Ca records of benthic foraminifera show glacial-interglacial variations during the last 150,000 years, suggesting that Pacific Deepwater circulation pattern was more different than today. The obtained Cd/Ca datasets appear to require the presence of a strong nutrient - depleted source in the North Pacific in the glacial periods. In contrast, Cd/Ca records in the Southern Ocean show the stagnancy of Circumpolar Deepwater during the glacial stages. These result may have had a greater impact on the chemical distribution of PDW and consequently the earth climatic system in the late Quaternary.