

## Frequently oscillation of Kuroshio Current during the last 35,000 years: Evidence from planktic foraminiferal Mg/Ca

# Katsunori Kimoto[1]; Minoru Ikehara[2]

[1] JAMSTEC; [2] Center Adv. Marine Core Res., Kochi Univ.

The Kuroshio, the western boundary current of the Pacific Ocean has its origin in the North Equatorial Current (NEC) on the equator and play a role to transport the heat from western equatorial Pacific to mid-latitude of northern Hemisphere. The migration of pass of the Kuroshio from north to south give a great impact to the Asian climatic conditions, especially humidity, vegetation, and human activities during the late Quaternary. Here, we have generated a multi-centennial resolution record of Mg/Ca of planktic foraminifera during the last 35,000 years in core MD01-2422 (32.14N, 133.86E, 2,737m water depth), off Shikoku, northwestern Pacific and reconstructed sea surface temperature (SST).

We used the *Globigerinoides sacculifer* (Brady) for reconstructing sea surface temperature (SST) of this core. Because this species appears from tropical to temperate seawater and relatively strong to the carbonate dissolution on the sea floor. The results of Mg/Ca of *G. sacculifer* showed variations from 2.0 to 3.9 mmol/mol since the last glacial period and highly oscillated with the range of 1 mmol/mol. Remarkably, such peak-and trough cycles would be occurred every 1,000 year. The average SST calculated from *G. sacculifer* Mg/Ca suggested approximately 25C and 22C in the Holocene and the LGM, respectively. It was consistent with the alkenone-based SST within 1C accuracy. However, the fluctuation ranges of Mg/Ca-derived SST in LGM and Holocene were 20 - 24C, and 23 - 26C, respectively. This highly temperature fluctuation should be caused by the south and northward shift of pass of the Kuroshio during the late Quaternary.