

Past 2 Myr Radiolarian Assemblages and Paleoceanographic Changes off the Southwestern Japan (IODP Site C0001)

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The effects of Quaternary paleoceanographic events on the Kuroshio Current off the southwestern Japan, including the mid-Pleistocene Transition (MPT) (1,200?700 ka) and the mid-Brunhes event (MBE) (400?300 ka), are poorly documented at this time because of a lack of long core recovering the MBE and the MPT. In this context, this study aims to establish paleoceanography of this region since the Early Pleistocene, using radiolarian assemblages as paleoceanographical proxy. The Holes C0001E and F, drilled by the R/V Chikyu during IODP Expedition 315 at a depth of 2198 m in the Shikoku Basin off the Kii Peninsula on the slope of the Nankai accretionary prism (southern Japan) are used in this study. The upper 190 m LSF sediments cover the Quaternary based on the shipboard results, the dominant lithology consisted of greenish-gray to grayish-green mud. The age model of Site C0001 is based on calcareous nannofossils datums, planktic foraminifers datums, radiolarians datums and *Globorotalia inflata* oxygen isotope stratigraphy. In this study, 240 samples of 20 cc, covering the Early to Middle Pleistocene, were used for radiolarian faunal analysis. The examination of the polycystine radiolarians was performed using an optical microscope at a magnification of 100?400x. In each sample, 400 to 1000 polycystine radiolarians were identified. The radiolarian-based sea surface temperature (rSST) was estimated using a Modern Analogue Technique (MAT). Several warming event is recorded during the Early Pleistocene. However, the strongest warming event is recorded during the MPT, where the subtropical fauna abundances increased consequently.

Keywords: Pleistocene, Paleoceanography, Mid Pleistocene Transition, Radiolarian