



Kuroshio meander recorded in coral oxygen isotopes

Atsuko Yamazaki (1), Jumpei Isasa (1), Keiichi Nomura (2), and Tsuyoshi Watanabe (1)

(1) Hokkaido University, Japan (zaki@sci.hokudai.ac.jp), (2) Kushimoto Marine Park Center

Kuroshio is one of the largest current in the world. The migration of Kuroshio front is closely related climate and fishery on Pacific coast of Japan. The large meander of Kuroshio occurred 5 times since the observation started in 1967. However, the mechanism of the occurrence of Kuroshio meander is still unknown. To capture the migration of Kuroshio path, we reconstructed oxygen isotope ratios in coral skeletons from Cape Shionomisaki, Wakayama and Tatsukushi Bay, Kochi during 1944-2008. The straight path of Kuroshio ordinary locates on Cape Shionomisaki and Tatsukushi Bay, but the meander path migrates southward from Cape Shionomisaki. The Kuroshio path is invariable at Tatsukushi Bay off, and Tatsukushi coral recorded the variation of Kuroshio transport continuously (Yamazaki et al., 2016). The difference oxygen isotope anomalies between Cape Shionomisaki and Tatsukushi Bay became 1‰ larger in maximum with the occurrence of Kuroshio meander, and its decadal variability correspond coral oxygen isotope changes reported from East China Sea published by Watanabe et al. (2014). Increasing coral oxygen isotopes at Cape Shionomisaki with the occurrence of Kuroshio meander suggested that the loss of the turbulence on the northern ridge of the Kuroshio axis bringing cold and lower oxygen isotope seawater from sub-surface. Decadal changes in the differences of coral oxygen isotopes between Cape Shionomisaki and Tatsukushi Bay suggested East Asian Monsoon and/or Pacific decadal climate variability related to the migration of Kuroshio path.