Radiocarbon Variability Recorded in Coral from Kikai Island to Understand Oceanography in the North Western Pacific Region

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Radiocarbon (^{14}C) in corals can be used as a sensitive indicator of vertical and horizontal advection of water masses, which contributes to the understanding of ocean circulation. In this study, a high-resolution ^{14}C record spanning 1947-2009 was obtained from a coral in Kikai Island in the south of Japan. The overall trend of Kikai ^{14}C curve is consistent with those in previous studies with an early bomb-^{14}C spike in July 1955, a rapid increase after 1962 and a steady decrease after 1980. The lack of periodicity in Kikai ^{14}C reveals the complex oceanographic situation around Kikai. The ^{14}C comparative study of Kikai and Ishigaki shows that the transport of ocean currents in this region is affected by PDO and ENSO. The Kikai ^{14}C record show the potential of reconstructing local oceanography and improve the understanding of Kuroshio Current and Ryukyu Current.

Keywords: coral radiocarbon, Kuroshio Current, Ryukyu Current

