

Carbon, oxygen and neodymium isotope characterization of recent benthic foraminifers around Okinawa-jima, southwestern Japan.

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The Kuroshio Current (KC) is the most important in the Northwestern Pacific, because it controls the Northeast-Asia climate by providing subtropical warm water. Although the KC is classified as oligotrophic, it carries elements from southern regions that promote the development of biodiversity and ecological niches around the Ryukyu Islands. The influence of the KC at low sea-level stands during glacial periods, especially in the Last Glacial Maximum, has been demonstrated to be weaker by several scientific methods.

There are limited geochemical studies on Neodymium (Nd) isotope composition around the Okinawa Trough although it is useful to detect water-mass variations and movement. We plan to delineate late Cenozoic paleoceanographic evolution of the KC in the Ryukyu Islands based on Nd isotopes of sediments and benthic foraminifers. This work was performed as the first step to this purpose and aimed to present detailed information on the carbon and oxygen isotope composition of the deep-water benthic foraminifers, *Cibicidoides wuellerstorfi* and *Hoeglundina elegans* and Nd isotope composition of mixed benthic foraminifers. Three water masses were identified based on our data: Kuroshio Surface Water (0-200m), Kuroshio Tropical Water (200-600m) and Kuroshio Intermediate Water (below 600m). The composition of the surface water is determined by mixing of the KC water and waters from Taiwanese and Chinese rivers. Subsurface water composition is controlled by the vertical mixing between the surface water and the intermediate water. The intermediate water is a mixture of the North Pacific Intermediate Water and South China Sea Intermediate Water.

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