

## Diatom Assemblage Distribution of the Kuroshio Region

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Kuroshio is the western boundary current located on the western margin of the subtropical circulation. In the west boundary current, a strong ocean current is established on the western coast of the ocean by the Coriolis force, the flow is fast, the basin is wide in the horizontal / vertical direction. The Kuroshio Current is known to meander, and roughly divided into three types of paths: a large-meander path, a non-large-meander nearshore path, and a non-large-meander offshore path. In the Kuroshio Current Region, warm water eddies and cold water eddies are generated, changing the characteristics of the Kuroshio path and water mass. Diatoms are useful as a water mass indicator because they change sensitively the assemblage in response to water temperature, salinity, nutrient, light intensity. Diatoms also form biogenic opal ( $\text{SiO}_2 \cdot n\text{H}_2\text{O}$ ), therefore diatom fossils are well-preserved in sediments. In order to reconstruct of the past Kuroshio meandering transition, the study purpose is to clarify the relationship between the current Kuroshio path and the diatom assemblages. Surface water samples were collected at 19 sites in the western North Pacific off Honshu Island from the Tosa Bay to off Ogasawara islands during the cruise of R/V *Hakuho-maru* KH 16-6 from November 11 to 28, 2016. Collected filter samples were observed under a field emission scanning electron microscope (FE - SEM, Japan Electronic JSM - 7001 F, Department of Earth and Planetary Science, Kyushu University). 31 diatom taxa including 14 species of 21 genera have been identified. Among them, major diatom genus encountered in this study were *Thalassiosira*, *Minidiscus*, *Mastogloia* and *Bacteriastrum*. *Thalassiosira mala* and *Minidiscus trioculatus*, both are known as coastal species, showed abundant in the vicinity of shelves in the Tosa Bay and near the Izu-Ogasawara Islands. *Minidiscus trioculatus* was found in relatively cold-water masses around the Ogasawara Islands. Relative abundances of *Thalassiosira mala* were high at sites with warm sea-surface temperature. *Mastogloia woodiana* and *Bacteriastrum* sp. 1, subtropical taxa, were only found open waters particularly in a warm eddy in the Shikoku Basin. *Mastogloia woodiana* and *Bacteriastrum* sp. inhabits mild waters of water and is a species that appears more often in the equatorial region and the Kuroshio. In the Kuroshio and its surrounding areas as described above, the diatom species are divided according to the water mass, and these findings are expected to serve as clues to restore the past Kuroshio flow path.

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