

Spatial distribution of diatom assemblages in surface water along the continental shelf margin of the Okinawa Trough in the East China Sea in January 2021

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Diatoms are phytoplankton with biogenic opal frustules, the hydrosphere's major primary producers. The East China Sea is a marginal sea of the western North Pacific, composed of two areas: continental shelves (< 200 m water depth) in the northwest and the Okinawa Trough (1000–2200 m water depth) in the southeast. Kuroshio flows northeastward along the continental shelf margin of the Okinawa Trough. Although there are a few previous studies about the spatial distribution of modern diatom assemblages in the East China Sea, no scanning electron microscope (SEM) observation has been reported. We performed the detailed SEM observation for modern diatom assemblages in surface water along the Kuroshio path in the East China Sea. Surface water samples were collected at forty stations in the East China Sea during the KH21-3 cruise of R/V Hakuho-maru from 23 January to 7 February 2021. The temperature (20.0–21.2°C) and salinity (34.6–34.7) of surface water along the ship track changed in a small range. The seawater samples were filtered through membrane filters with 0.45 μm pores and desalted onboard. For SEM observation, we selected eight filter samples. A total of 17 genera and 5 species of diatom taxa were identified. Diatom assemblages in the eight samples were similar, and the major diatom taxa were common: *Chaetoceros* spp., *Minidiscus trioculatus*, *Nitzschia* spp., *Thalassiosira oceanica*, and *Thalassiosira partheneia*. Almost all the encountered diatoms were planktic marine taxa. *Paralia* spp., benthic taxa abundant on the continental shelves, were not found in the observed eight samples. Cell sizes of *Minidiscus* spp. (2–3 μm) and *Thalassiosira* spp. (<10 μm) are small so that they might easy to be unrecognized by light microscopic observation.