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Characteristic Diatom Records Reconstruct the Oceanographic Changes in the
Central Okhotsk Sea during the Last 520 kyr

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Abstract

Based on the relative abundance of 13 diatom species in the piston core MD012414, the environmental conditions in the central Okhotsk Sea can be distinguished into four types during the last 330 kyr BP. The four types of oceanographic changes are: (1) open-ocean alternating with seasonal sea-ice covered in Stages 9, 5, and 1, (2) open-ocean with sea-ice free covered in Stages 7, and 3, (3) sea-ice covered perennially in Stages 6, 4, and 2, and (4) warm ice-age dominated with open ocean assemblages in Stage 8. The littoral diatom species, *Paralia sulcata*, showed a sudden increase from the glacial period to the deglacial period during the last 350 kyr BP, except in Stage 8. These results infer that melting sea-ice transported terrigenous materials from the north Okhotsk Sea continental shelves to the central ocean during deglaciation. From 520 kyr to 330 kyr, however, all cold and warm marine conditions were displayed in the early interglacial periods and the glacial periods. One possible reason is a lack of age control points between 520 kyr and 330 kyr, and the different accumulation rates between glacial and interglacial periods.

Key words : MD012414; Paleoenvironment; Diatom; Okhotsk Sea