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Spatial-temporal reconstruction of Holocene SST in the Japan Sea based on radiolarian assemblages

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The Tsushima Warm Current (TWC), which is only source of oceanic water in the Japan Sea during Holocene, transports heart, salt and nutrients from the East China Sea via the Tsushima Strait, and plays important roles of climate and ecosystem of the Japan Sea. In this study, we reconstructed Holocene changes of sea surface temperature (SST) based on radiolarian fossil records from more than 20 cores. In south of the polar front, the SST increased significantly through 12.5 ka to 8 ka, and showed millennial scale oscillations after that. On the other hand, low SST conditions have continued at north of the polar front due to weak influence of the TWC.

Keywords: paleo sea surface temperature, microfossils, paleoceanography, polar front