

# Reconstructure of paleo-environment of Japan Sea by alkenone sea surface paleo-thermometer

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Japan Sea is a marginal sea connected with the open ocean through the shallow and narrow straits which water depth are smaller than the 130m. And hence, the samples taken from the sea can be used to reconstruct the paleoceanography relating to the global sea-level changes. The area also is undergone influence of the East Asian monsoon so that we can extract past histories of the monsoon intensity to the region. In this study, we reconstructed the paleoSea Surface Temperature (SST) using the alkenone thermometer. Alkenone has been used as the paleo-thermometer because the ratios of 2 and 3 unsaturated carbon number 37 alkenones are temperature dependent. The sediment cores are recovered from the Oki ridge (946 m water depth) and radiocarbon dating was conducted for the 14 horizons after sedimentological experiments had been completed.

The result indicates that there were 4 distinct SST stages in the Japan Sea from glacial period to the present. The high temperature stage was found during the LGM as was reported in the previous studies. Then the second event is seen for the ca. 2-3 thousand years during the post LGM period which SST was similarly warm as is found in the modern ocean followed by the rapid cold event (-7 degree C). After the lowest SST period, gradual rise in the SST was found. These 4 SST variation stages are correlated with the changes in the colors of the sediment. It indicates that the alkenon data reflects not only the SST but also the physical oceanographic conditions of the Japan Sea. We report the fluctuations in the alkenon data in the core correlated with the global climate changes for the last 24 kyrs.