

## Reconstruction of Millennial-scale variations in the East Asian Monsoon during the last 300 kyrs from sediments of Lake Biwa

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In the 1980s-1990s, millennial-scale abrupt climatic changes during the last glacial periods such as Dansgaard-Oeschger cycle (D-O cycle) have been reported from the Greenland ice cores and the North Atlantic deep-sea core studies (e.g. Dansgaard et al., 1984). In order to predict climatic stability, it is necessary to clarify the mode of D-O cycle in other climate systems, in particular elucidations about relations between the Asian Monsoon and D-O cycle. In order to interpret the mechanism of East Asian Monsoon variations and relationship with D-O cycle, this study focuses on sediments of Lake Biwa that can reconstruct long term paleoclimatic changes with high resolution.

Climate of Japan, especially precipitation, is chiefly controlled by the East Asian Monsoon, therefore, histories of the East Asian Monsoon is recorded in paleoclimatic proxies in Japan. In Lake Biwa, homogeneous silty clay sediments, maximum thickness of about 250 m, have been deposited since about 400 ka (Horie,1984). This means sediments of the lake have been continuously deposited under stable conditions. The paleoclimatic changes in Japan are well preserved in the sediments of Lake Biwa, because Lake Biwa has been completely independent of the ocean. In addition, sedimentation rate of Lake Biwa is larger than that of ocean, therefore, a high resolution reconstruction of paleoenvironment is more feasible.

This study shows the result based on TC, TN and biogenic silica contents of Takashima-oki core which was taken in 1986 with the total length about 150 m. The good correlation between TC contents and biogenic silica contents shows that TC contents indicate primary biological productions in upper 100m of the core (for the last 300,000 years). TC contents are one of the proxies of precipitation, because the primary productions in lake Biwa are controlled by inflow of nutritive salts brought from catchment area. The millennial-scale variations in the East Asian Monsoon during the last 300,000 years, which has been rarely discussed, are reconstructed by TC content which indicates precipitation.

The East Asian Monsoon in Japan reconstructed has the millennial-scale variations during the last 300,000 years, periodicities of the millennial-scale variations correspond to the periodicities of D-O cycle. The millennial-scale cycle in the East Asian Monsoon, which differs from the paleoclimatic changes in high latitude region of the northern hemisphere, clearly existed during the interglacial.