

Paleo-redox changes of Lake Baikal derived from sulfur, nitrogen and carbon studies in the VER98-1 St.5 sediment core

Takahiro Watanabe[1], Hiroshi Naraoka[2], Mitsugu Nishimura[3], Takayoshi Kawai[4]

[1] Dept. of Chem., Tokyo Metropolitan Univ., [2] Dept. of Chem. Tokyo Metropolitan Univ., [3] Marine Sci. and Tech., Tokai Univ., [4] NIES

Fluctuation of past-redox conditions in Lake Baikal has not been reported. In order to clarify the change of oxic/anoxic condition including biological activity, we analyzed total sulfur (TS), total nitrogen (TN) and total organic carbon (TOC) concentrations as well as bulk stable nitrogen isotope ratios and stable carbon isotope ratios of TOC using a Lake Baikal sediment core. As a result, twenty-eight abrupt increases of TS/TOC ratio are recognized during the past 300kyr. The enhancements of TS/TOC ratio indicate that the lake water-body became anoxic. The lake water circulation could be stopped or extremely weakened by climatic changes.