

## Paleo lake environmental change reconstructed from varved lacustrine sediment in Lake Fukami, Nagano Prefecture, central Japan

# Ikuo Kawakami[1], Masanori Matsuo[2], Megumi Kato[3], Hitoshi Fukusawa[4]

[1] Department of Geography, Tokyo Metropolitan Univ., [2] Geo.TMU, [3] Geography, Sci., Tokyo Metropolitan Univ., [4] Dept. of Geography, Tokyo Metropolitan Univ.

Continuous varve sequences were taken from Lake Fukami, which is known as a monomictic lake, southern part of Nagano Prefecture, central Japan in 2000. Total 196 varve units were recognized in upper 2m horizon of those sediments. The sedimentation rate of the sediments have some high peaks, and they indicate the increment of clastic particles supplied to the lake owing to the natural disasters like floods or earthquakes and the artificial construction around Lake Fukami.

Also, as the results of correlation between the meteorological records in Iida meteorological station, which is the nearest one, and total carbon flux change of the sediments in the Lake Fukami based on the varve chronology, it is clarified that the total carbon flux of the sediments is in inverse proportion to February mean temperature and precipitation. These indicate that February mean temperature controls the vertical mixing of lake water column that affects the productivity of phytoplankton in epilimnion or decomposition of organic matter in hypolimnion, and February precipitation, as Terai (1988) found, probably affects the activity of denitrifying bacteria in stagnation period, respectively.