Reconstruction of paleosecular variation from Lake Biwa sediments: Pass-through measurements and SQUID microscopy

*Hirokuni Oda[1], Yuhji Yamamoto[2], Yoshio Inouchi[3]

1. Institute of Geology and Geoinformation, Geological Survey of Japan, AIST, 2. Kochi University, 3. Waseda University

We have conducted measurements on one of the three piston cores taken from Lake Biwa off Takashima (BWK12-2; length 1633 cm). Sediment comprises of clay intercalated with at least 13 ash layers. Thirteen horizons were dated with ^{14}C using plant pieces giving a maximum age estimate of more than 40 ka. Paleomagnetic cube specimens, u-channel samples and LL-channel samples were taken from the core. Paleomagnetic cube specimens were measured with a SQUID Rock Magnetometer at AF demagnetization steps of 0-80 mT. Results of inclination from the cube samples show an agreement with the paleosecular variation reported by Ali et al. (1999). For example, Inclination show a minimum of ~40˚ at 2600 year BP and a maximum of ~58˚ at 3400 year BP, both of which can be correlated with a minimum 'h' at 2400 year BP and a maximum 'i' at 2900 year BP presented by Ali et al. (1999), respectively. Pass-through measuremens on u-channel and LL-channel samples were conducted both at Geological Survey of Japan and Kochi Core Center. Paleomagnetic results after deconvolution for u-channel and LL-channel at two different laboratories with different sensor response functions will be compared together with the results of cube samples. Further, a preliminary results measured with a scanning SQUID microscope on some block samples taken from LL-channel samples are going to be presented.

Keywords: Scanning SQUID microscope, paleosecular variation, Lake Biwa

