

## Magnetic properties of piston-core samples from Lake Biwa - stratigraphic correlation of magnetic susceptibility data

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We obtained six piston-core samples from Lake Biwa in 2007, intending to recover high-resolution records of paleoenvironmental and paleomagnetic data for the last 50 kyrs. Here we report initial results of magnetic susceptibility and its anisotropy (AMS) from a piston core, BIW07-1 (9.4 m long), obtained between Omatsugasaki and the Okinoshima Island, and two piston cores, BIW07-3 (8.6 m long) and BIW07-5 (13.8 m long), recovered along a transect with water depth from 30 to 50 m off Nagahama City. The magnetic susceptibility measurements were made on cubic samples using an AGICO KLY-3 Kappabridge.

Core BIW07-1 was recovered near the coring site in 1995 (Site 3 of Takemura et al., 2000). The new coring site is located at a water depth of 73 m, which was slightly shallower than the previous site. The susceptibility profile of BIW07-1 shows low amplitude fluctuations at the interval of homogeneous clay and outstanding peaks at horizons of volcanic ash layers. These features are quite similar to those observed in the 1995 cores. By examining the susceptibility features, occurrences of tephra deposits, Kawadodaira (Kg), Kikai-Akahoya (K-Ah) and Ulreung-Oki (U-Oki), were confirmed. These correlations indicate that the bottom part is dated at around 12 ka.

Magnetic susceptibility profiles were also useful for correlation between the BIW07-3 and BIW07-5 cores off Nagahama. Here susceptibility peaks corresponding the U-Oki, Aira-Tanzawa (AT) and Sanbe-Ikeda (SI) ashes were identified. It was also noticeable that the lower part of BIW07-3 showed higher susceptibility values due to the presence of sandy sediments.

Analysis of AMS showed that a principal axis ( $K_{max}$ ) of the AMS ellipsoid is distributed near the horizontal plane, except the topmost and lowermost part of the core. AMS ellipsoids of BIW07-5 were significantly inclined, however, particularly in the lower part, where numbers of tensional cracks were also observed. The sediment of BIW07-5 seems significantly deformed during coring procedure, while original sedimentary structure is preserved in the other cores.