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## Sedimentary Record of Geomagnetic Polarity Excursions in Core Samples from Lake Biwa

Tomohiro Yamamoto<sup>1\*</sup>, Masahiko Yasuda<sup>2</sup>, Akira Hayashida<sup>3</sup>

<sup>1</sup>Dept. Environ. Sys.Sci., Doshisha Univ., <sup>2</sup>Dept. Environ. Sys.Sci., Doshisha Univ.,

<sup>3</sup>Dept. Environ. Sys.Sci., Doshisha Univ.

We made paleomagnetic study of two piston cores (BIW07-2 and BIW07-6) recovered from Lake Biwa, in order to detect detailed records of geomagnetic polarity excursions in the late Brunhes Chron. Our core samples are mainly composed of homogeneous bluish gray clay and silty clay, intercalated with several volcanic ash layers. Tephrochronological data and AMS radiocarbon dating indicate that these cores covers the time interval for about 46 kyrs, providing an average sedimentation rate of about 30-40 cm/kyr. Results of anisotropy of magnetic susceptibility (AMS) measurement suggest that most intervals were not affected by coring disturbance except the core-top and vicinity of some volcanic ash layers. Systematic changes in declination of natural remanent magnetization (NRM), probably caused by rotation of the corer, were also observed at limited intervals. Nevertheless, the NRM directions of both cores show consistent variations. In particular, an interval dated at 41 ka is characterized by shallow inclination, eastward shift of declination, and significantly low NRM intensity normalized by anhysteretic remanent magnetization (ARM). We attribute these features to the Laschamp geomagnetic excursion, although virtual geomagnetic poles (VGP) stay at high and middle latitudes in the Northern Hemisphere. This result suggests dominance of regional non-dipole feature under decreased dipole field rather than a global geomagnetic reversal during the Laschamp excursion.

Keywords: Laschamp excursion, lake sediment, Environmental magnetism, Dansgaard-Oeschger cycles