

## Paleomagnetism of Pleistocene widespread tephra deposits and its implication for tectonic deformation in central Japan

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We made a paleomagnetic study about a widespread tephra deposit, the Ebisutoge-Fukuda Tephra intercalated just above the Plio-Pleistocene boundary in central Japan. Oriented samples were collected from a total of 25 sites in 8 areas. Amount of magnetic minerals decrease as it moves away from the vent. After tilt correction, samples from the Osaka-Kyoto and Mie area showed identical mean declinations of about  $-170^\circ$ , whereas the Ebisutoge Pyroclastic Deposits showed a mean declination of about  $-155^\circ$ . These data suggest that a clockwise rotation occurred in the Takayama in respect to the other areas.

Numerous widespread tephra deposits occur in central Japan, representing key beds or synchronous time planes in stratigraphic investigations. A single layer of such widespread tephra deposits possibly provides an instantaneous record of the past geomagnetic field and may indicate even a small-scale tectonic rotation compared to a range of geomagnetic secular variations. On the Japanese Islands, two widespread tephra layers, the Imaichi-Azuki Tephra dated at 0.85 Ma and the Yabakei-Pink Tephra at 1.00 Ma, respectively show identical paleomagnetic directions. These data suggest that no detectable rotation has occurred between central Kyushu, Kyoto-Osaka area and the Boso Peninsula over a distance of 1000 km since 1.0 Ma. We recently made paleomagnetic study of the Ebisutoge-Fukuda Tephra, which is dated at about 1.75 Ma and distributed in central Japan between Kyoto-Osaka area and the Boso Peninsula. The Fukuda Volcanic Ash layer and its correlative ash deposits in Kyoto-Osaka, Mie and Niigata areas yielded identical site mean declinations of about  $-170^\circ$  after tilt correction, whereas inclination shallowing was observed in several units deposited in fluvial environment. On the other hand, the source volcanic unit, Ebisutoge pyroclastic deposits in the Takayama area, showed a mean declination of about  $-155^\circ$ . These results suggest that no significant rotation has occurred between the Kyoto-Osaka and Mie areas, but the Takayama area has suffered a clockwise rotation in respect to the other areas during the Quaternary. This rotation might be caused under E-W stress field associated with the collision of the Okhotsk Plate to the Eurasia Plate.