

## Tentative estimation of the age of Tsurumidake summit lava, Beppu City, by paleomagnetic directions and paleointensities

# Shoko Fujii[1]; Naoto Ishikawa[2]; Takeshi Saito[3]; Takeshi Sugimoto[4]; Keiji Takemura[5]

[1] Graduate School of Human and Environmental studies, Kyoto Univ.; [2] Graduate School of Human and Environmental Studies, Kyoto Univ.; [3] Institute for Geothermal Sciences, Kyoto University; [4] BGRL, Kyoto Univ.; [5] Beppu Geo. Res. Labo., Grad. Sci., Kyoto Univ.

The eruption age of the Tsurumidake summit lava at Tsurumi Volcano in Beppu City, Kyusyu, is still controversial: Kobayashi(1984) suggested that the age of the lava is younger than Kikai-Akahoya tephra (K-Ah:6.3KaBP) and that the eruption occurred 1500-1200 years ago judging from the distribution pattern of historic sites and descriptions in the ancient manuscript.

However, Fujisawa et al.(2002) suggested that the age of the lava is older than K-Ah according to tephra chronology. In order to estimate the age of the lava based on paleomagnetic measurements on the lava we performed paleomagnetic measurements on the lava samples collected at four sites.

Progressive demagnetization experiments of thermal and alternating-field methods were effective to isolate stable magnetic components carried by magnetite. Site-mean directions of the characteristic magnetic components were obtained from three sites. A mean direction of the three sites was as follows: Dec=-8.1 degrees, Inc=53.6 degrees and alpha-95=12.4 degrees.

We employed the Thellier method and the double-heating technique of the Shaw method for paleointensity determination. As a result, we obtained two paleointensity values of 39.9 microT and 31.6 microT.

We compared our paleomagnetic of Japan in the past 6000 years (Miki, 1999), time variation of Japan in declination and inclination at Beppu Bay in the past 10000 years (Ohno et al., 1991) and variation of virtual axial dipole moment (VADM) for the past 10000 years (Yang et al., 2000).

The mean direction of the stable magnetic components was not useful for age estimation because of large confidence limit of the mean. According to the paleointensity data, it may be inferred that the eruption of the Tsurumidake summit lava occurred before 4kaBP.