

Paleointensity study of the last stage of the Brunhes-Matuyama polarity reversal recorded in lavas on Tahiti Island

Nobutatsu Mochizuki[1]; Hirokuni Oda[2]; Osamu Ishizuka[3]; Toshitsugu Yamazaki[4]; Hideo Tsunakawa[5]

[1] Geological Survey of Japan, AIST; [2] IGG, GSJ, AIST; [3] GSJ/AIST; [4] GSJ, AIST; [5] Dept. Earth Planet. Sci., Tokyo TECH

We have been investigating the Brunhes-Matuyama (B-M) polarity reversal recorded in 21 lavas of the northern side of the Punaruu Valley, Tahiti Island. To date mean paleodirections were obtained for 18 lavas and mean paleointensities for 13 lavas. The results show two stages of paleodirection: (1) the directionally stable period with reversed polarity and (2) the directionally unstable period with intermediate-normal-reversed (I-N-R) polarity change. These directional changes suggest that the lavas record the earlier stage of B-M reversal. For the directionally unstable period (2), the paleomagnetic field intensity was probably weak (4.7 micro-T) though only one lava gave a meaningful paleointensity. For the directionally stable period with reversed polarity (1), the palaeintensity results suggest that the field intensity varied in oscillation-like manner between 1.6 and 42.9 micro-T. It should be noted that the virtual dipole moments (VDMs) in the oscillation-like change show a strong correlation with the VGP latitudes change, suggesting one of the important dynamic processes in the geodynamo reversal.

We recently sampled lavas which are younger than the 21 lavas mentioned above. These lavas may record the last stage of the B-M reversal. We will present rock-magnetic, paleodirectional and paleointensity results from these lavas.