

## Absolute Paleointensities From the Unzen Volcano, Japan - Paleointensity Variation During the Last 500 Kyr

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The Unzen Volcano in Japan is a composite volcano consisting of lava domes, lava flows, and pyroclastic deposits with compositions ranging between andesite and dacite. The volcano is subdivided into the Older and Younger Unzen Volcanoes with active periods 150-500 and 0-150 ka, respectively (Hoshizumi et al., 1999). Paleomagnetic cores were collected from 69 sites, and paleosecular variation of directions was studied by Shibuya et al. (2007). We have measured absolute paleointensities from 306 specimens by the LTD-DHT Shaw method (Tsunakawa and Shaw, 1994; Yamamoto et al., 2003) and report these results.

From high-temperature susceptibility measurements, the main remanence carriers were judged to be titanomagnetites (TMs) of TM05-TM25 composition ( $T_c = 400-550$  C). They are generally thought to be products of deuteric oxidation because coarse TM grains associated with exsolved ilmenite lamellae were observed in thin section analyses. Hysteresis and FORC measurements suggest that the samples are admixtures of SD (and/or PSD) and MD. Contributions of MD-like remanences are considered to be large since most samples exhibit 5-35 per cent loss of ARMs during low temperature demagnetization (compared to for example, 0-20 percent loss in the Society basalts; Yamamoto and Tsunakawa, 2005).

The LTD-DHT Shaw method yielded 210 successful paleointensity results giving 30 reliable site mean paleointensities (number of determinations per site is no fewer than 3, and standard deviation is within 20 per cent of the site average). The average and the standard deviation of the corresponding VADMs (virtual axial dipole moments) are  $73.5 \pm 31.0$  ZAm<sup>2</sup>. Results are mostly obtained from 100-300 ka samples, and the average and the standard deviation for this period are calculated to be  $70.2 \pm 27.1$  ZAm<sup>2</sup> (N=18). These are consistent with the selected Thellier data from the PINT03 database ( $73.6 \pm 24.1$  ZAm<sup>2</sup>, N=32), indicating that the strength of the geomagnetic field during 100-300 ka was roughly equal to the present-day field.

Shibuya et al. (2007) found that one lava flow in the Senbongi area (K-Ar age of  $197 \pm 17$  ka) had an intermediate VGP at  $8.3^\circ$ N and  $21.6^\circ$ E. They concluded that the age and VGP position apparently correlate with the Iceland Basin excursion (180-190 ka). Our paleointensity measurements on samples from this lava resulted in an average VDM of  $22.4 \pm 2.1$  ZAm<sup>2</sup> supporting the existence of this Senbongi excursion.