Geophysical Research Abstracts
Vol. 13, EGU2011-12056, 2011
EGU General Assembly 2011

Multispecimen and Thellier type paleointensity determinations from postglacial lavas of Snaefell volcano, Iceland

Elisabeth Tauber (1), Franz Josef Türk (1), and Roman Leonhardt (2)
(1) Montanuniversität Leoben, Leoben, Austria, (2) ZAMG, Conrad Observatory, Wien, Austria

Samples from fourteen different lava flows were taken from the Snaefells peninsula, west Iceland. All sampled sites correspond to post-glacial Holocene lava flows related to volcanic activity at Snaefells volcano. The samples were subjected to paleomagnetic and rock magnetic analyses in order to obtain reliable intensities and directions of the ancient magnetic field. Curie-temperatures, measurements of anisotropy of magnetic susceptibility (AMS) and thermally dependent ARM measurements are used to subdivide the samples into specific groups regarding alteration and mineralogy. Paleodirection results yield inclinations between 54° and 82° and declinations between 290° and 45°, as expected for the high northern latitude. According to rock magnetic results and the classification into alteration- and mineralogytypes a pre-selection for Thellier-measurements was conducted. Thirty-eight samples were chosen for a modified Thellier-type paleointensity determination which includes alteration checks and domain state checks. A minimum of seven samples in each case from five sites were additionally subjected to a domain state sensible multispecimen protocol (MSP_{DSC}). Results compare very well with a higher success rate using the MSP_{DSC} technique. The results allow for the first time to estimate the previously unknown ages of the Holocene flows in the vivinity of Snaefell using a Bayesian archeomagnetic dating approach, thus providing valuable information for volcanogenic hazard analysis.