



First paleomagnetic results from the South Harghita Mountains (East Carpathians, Romania)

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In the Eastern Carpathians, the volcanism was active from 12 Ma to < 1 Ma, migrating southeastward and progressively waning (Pecskay et al., 1995). The last part of the volcanic chain in the Harghita Mountains where the volcanic activity took place between 5 Ma and < 1 Ma. Previous paleomagnetic results in the Eastern Carpathians were obtained from the northern part of the volcanic chain (Patrascu, 1993), the central part (Patrascu, 1976) and the south-western end (Panaiotu et al., 2004). In this paper we present the first paleomagnetic results from the southern part of the volcanic chain (the South Harghita Mountains). We report results from 21 sites sampled in andesites, basaltic andesites and dacites. Rock magnetic analyses (thermomagnetic analyses, hysteresis, direct and backfield IRM measurements, field dependence of the magnetic susceptibility, FORC diagrams) have been carried out in order to evaluate magnetic mineralogy and grain size. Samples from each site were demagnetized using both thermal treatment and alternating fields. Both demagnetization methods had successfully isolated well-defined magnetic components which are interpreted to represent the Earth's magnetic field at the time of volcanic activity. Twelve sites have reversed magnetic polarity, six have normal polarity and the rest have transitional directions. The characteristic directions of the sites with normal and reversed polarity are not far from the present day north-south direction within the secular variation limits. This shows that the investigated area was not subjected to vertical axis rotations after the emplacement of the volcanic rocks. Our result is in agreement with

the new GPS data from this area (van der Hoeven et al., 2005) which show the absence of relative movements with respect to stable European platform.