



Paleomagnetism of the Pliocene-Quaternary volcanic rocks of the Eastern Carpathians

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The Eastern Carpathians are part of the Carpathian chain, which extend over more than 1700 km between the Eastern Alps and the Balkans. Starting in Pliocene a series of basins (Braşov, Gheorgieni, Ciuc) were superimposed on Cretaceous-Miocene structures in the internal part of the Eastern Carpathians. The formation of the basins was accompanied by alkaline basaltic and calc-alkaline andesitic and shoshonitic volcanism. The target of our study was the Pliocene-Quaternary volcanism from the northern margin of the Braşov basin. We resampled the alkaline basalts of the Perşani Mountains (33 sites, 1.2 – 0.6 Ma,) and 19 new sites in the Harghita Mountains (2.8-0.6 Ma, alkaline andesites and shoshonitic rocks). The structure of the natural remanent magnetization was studied using both AF and thermal demagnetizations. The characteristics of magnetic mineralogy were determined using several rockmagnetic investigations: temperature and field dependence of the magnetic susceptibility, hysteresis properties and FORC diagrams. In all sites we identified the primary magnetizations. The magnetic carriers depend on the sampled rocks and range from titanomagnetite to magnetite or hematite. The distribution of the magnetic polarity, corroborated with available ages, suggests episodic volcanic activity. In the Perşani Mountains several sites with intermediate directions can be correlated with the Cobb Mountain subchron (around 1.2 Ma) and an excursion during Brunhes Chron around 600 ka. We will analyze our data against the available tectonic and GPS data to see if the distribution of paleomagnetic directions reflects tectonic rotations during the Pliocene-Quaternary evolution of the Braşov Basin or insufficient average of the secular variation of geomagnetic field.