# Field-reversal versus self-reversal hypothesis: Paleomagnetic properties and magnetic mineralogy of selected Neogene hornblende pyroxene andesites of central Slovakia (Part II)

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A b s t r a c t: Hornblende pyroxene andesites with biotite ± hyperstene, of the undivided rocks of the fourth stage of the Štiavnica stratovolcano, highly metamorphosed hyperstene-hornblende-biotite andesite and hornblende pyroxene andesite from the Rohy formation of the Javorie and Poľana mountain range were studied. Magnetites (Mt; cubic phase), homogeneous, or quasi homogeneous titanomagnetites (Ti-Mt; cubic phase) are carriers of only normal remanent magnetism (RM) in the andesites. Ilmenite-hematite (Ilm-hem) solid solutions of the composition $Ilm_5$ $hem_{95}$ to $Ilm_{12}$ $hem_{88}$ carry the reversed RM of the self-reversal origin. The most oxidized phase contain pseudobrookite and hematite. The hematite is the carrier of only positive RM, while the pseudobrookite is a paramagnetic mineral. If there are present both, the Ti-Mt and Ilm-hem in the rock, the Ti-Mt will carry soft, normal RM and the Ilm-hem will carry either the reversed RM of the self-reversal origin. These both types of RM are of high paleomagnetic stability. The reversed thermoremanent magnetization (TRM) of self-reversal origin of selected samples was induced in the laboratory field of normal polarity. Andesites of both geological formations originated in the time of the Lower to Upper Badenian age. The results have shown that the geomagnetic field was not reversing its polarity during this time.

**Key words:** the Neogene andesites, magnetite and titanomagnetite the carriers of normal RM, Ilmenite-hematites the carriers of reversed RM of self-reversal origin

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