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## Perpendicular Magnetic Fabrics in Granitic Rocks of the Bratislava and Modra Massifs (Malé Karpaty Mts.) and their Tectonic Origins

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The Malé Karpaty Mts. represent the southwestern geomorphic unit of the Central West Carpathians. Despite their moderate extent, 91 km in length and 15 km in width, their geological structure is rather complex, i.e. their Variscan crystalline complexes are overlain by Alpine sedimentary formations, both showing nappe structures. Among Variscan granitoids, two major bodies are distinguished: the older Bratislava Massif ( $347 \pm 4$  Ma, using Rb-Sr isochrone method), consisting of peraluminous muscovite-biotite ( $\pm$  garnet) monzogranites and granodiorites, and the younger Modra Massif ( $326 \pm 22$  Ma) built up mainly of metaluminous biotite ( $\pm$  hornblende) granodiorites and tonalities. Both the granitoid massifs occur within metamorphic rocks. Detailed investigation of the anisotropy of magnetic susceptibility (AMS) was made (more than 500 orientated specimens were measured) in order to reveal the magnetic fabric patterns in both the massifs and the structural relationship between the granitic and surrounding metamorphic rocks.

The bulk magnetic susceptibility ranges from about 60 to  $200 \times 10^{-6}$  SI units in the Bratislava massif and from 100 to  $250 \times 10^{-6}$  SI units in the Modra massif indicating that the mag-

netic fabric is carried to a relatively large extent by paramagnetic minerals (biotite). The degree of AMS is relatively low ( $P = 1.03 - 1.12$ ) and homogeneous within each massif, the magnetic fabric being mostly planar. The orientations of magnetic foliation and magnetic lineation are relatively homogeneous within each massif. In the Bratislava massif, the magnetic foliation poles create a girdle oriented NW-SE and the magnetic lineation creates a cluster oriented NE-SW, like in surrounding metamorphic rocks. In the Modra massif, the magnetic foliation poles create a girdle oriented NE-SW and the magnetic lineation creates a cluster oriented NW-SE, like in surrounding metamorphic rocks of the Pezinok-Pernek Crystalline unit.

The conformity in magnetic fabrics of the granitic and surrounding metamorphic rocks with undoubtedly deformational magnetic fabrics within each massif indicates that the magnetic fabric in the granitic rocks is not intrusive, but rather deformational in origin. The perpendicular orientations of the magnetic fabrics in the Bratislava and Modra massifs are probably a consequence of mutual rotations of both the massifs.