

MAGNETIC ANISOTROPY OF THE ZONE OF TERTIARY GRANITOIDS AT THE SOUTHERN MARGIN OF THE PANNONIAN BASIN (SERBIA)

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The subjects of this study are granitoid intrusions of Late Oligocene – Early Miocene (I-type) and Middle Miocene (S-type) ages such as the Cer, Bukulja and Brajkovac and two lamprophyre dykes (Mt. Vencac) of Miocene age. This zone represent the connection between the Periadriatic and Vardar zones. The granitoids intruded mainly Paleozoic, regionally metamorphosed sediments. Cer pluton is composed of quartz monzonite (I-type) and small bodies of S-type granite. Bukulja pluton is predominantly a two-mica granite (S-type). Brajkovac is a granodiorite (I-type) intrusion.

We studied the AMS of 117 samples from the above described intrusions, made magnetic mineralogy and AARM experiments on selected samples.

The susceptibilities for the studied I-type rocks are closer to expected values for S-type than I-type granitoids ($1.2-3.3 \times 10^{-4} \text{SI}$), while the S-type rocks show the expected low susceptibilities ($0.26-0.89 \times 10^{-4} \text{SI}$). The AMS is 4.5-7.9% for the first group and 4.3-14.2% for the second. The magnetic fabric is mainly foliated. The foliation planes for Brajkovac are suggestive of a dome-like structure which must have been formed during an extensional regime. The I-type granitoid from the Cer pluton has near-horizontal, while the S-type near vertical foliation planes, suggesting that the latter intruded as a dyke. The foliation planes for the central part of Bukulja are also sub-horizontal, while they are near-vertical close to the contact with the host rocks. The magnetic fabrics of the two lamprophyre dykes are of different character and they do not relate to the orientation of the dykes neither to any orientation planes observed for the metamorphic host rocks.

Compared to the closest I-type Periadriatic pluton (Pohorje) as well as with the I-type granitoids of the Kopaonik area, the I-type granitoids of the present study exhibit much lower susceptibilities and are less anisotropic. The AMS and AARM ellipsoids for some samples are co-axial, for others different. This is also true of the S-type granites. There is also difference in magnetic mineralogy: In the Pohorje and in the granitoids of the Kopaonik area the only magnetic mineral is magnetite, while in the Southern Pannonian intrusions e.g. pyrrhotite is observed.

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