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The nature of the high values of the anisotropy of magnetic susceptibility of rock samples with polydomain ferromagnetics

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Abstract

Samples of different rocks, which possess high values of the anisotropy of magnetic susceptibility, were studied by the magneto-mineralogical and optical methods and by microprobe analysis. It was established that for the samples, which contain the pseudo-singl-domain ferromagnetite elongated particles, the source of the anisotropy of magnetic susceptibility is the distribution anisotropy of not only ferromagnetic grains themselves, but also ferromagnetic patterns in the heterogeneous accessory minerals. For samples with multidomain ferromagnetic materials, the nature of the anisotropy of magnetic susceptibility is caused by the orientation of the ilmenite lamellar phase in the structures of disintegration of titanomagnetites or by the orientation of the ferromagnetic structures of disintegration in iron sulfides. © Pleiades Publishing, Ltd. 2009.

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