



The Elbrus volcano (Northern Caucasus): geodynamic position and the deep subsurface structures

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Geodynamic position of the Elbrus volcano (Northern Caucasus) within the Transcaucasia uplift is considered with respect to evolution of volcanic processes and possible resumption of volcanic activity in this region. In order to carry out the multidisciplinary study of geological and geophysical processes with specific attention to thermal anomalies in the vicinity of the volcanic dome it is essential to obtain reliable information about basic parameters of the magmatic chamber and the deep magmatic source located in the area of the Elbrus volcanic center. In this contribution results of satellite imagery processing are presented. The processing of images has been carried out according to original technology based on determination of surface lineaments and consequent transition to analysis of the field of tectonic disintegration of the lithosphere. This technology allows independent information obtaining about deep structures for a given territory. Thus, the 3D model of tectonic disintegration field under the Elbrus volcano has been constructed. The two anomalous domains have been outlined in the tectonic disintegration field volume and they may be associated with local magmatic structures: the deep magmatic source and peripheral magmatic chamber of the Elbrus volcano. Comparative analysis of the results of our research work with experimental geophysical data obtained by means of microgravity studies of the same territory, magneto-telluric profiling and search for thermal anomalies has shown appropriate correlation in terms of shape, size and position of magmatic structures in the vicinity of the Elbrus volcanic center.