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# Temperature estimation for the most upper part of magmatic chamber of the Elbrus volcano

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The results of theoretical and experimental studies on thermal processes in the Elbrus volcanic center and adjacent territories are presented. Distributed temperature measurements on the Elbrus volcano and near the Maloye Azau glacier by means of temperature data loggers («High Capacity Temperature Loggers iButton» and «Rejim-avtomat-termo-10-100») have been performed. The comparative time series analysis is provided.
On the basis of the Geophysical Observatory in Northern Caucasus, in the laboratory located some 20 km from the Elbrus volcano in the tunnel at a depth of 4 km the array of temperature sensors has been deployed.
Results of continuous observations over variations of underground temperatures, including pin-point measurements in the vicinity of sources of carbonaceous mineral waters are presented and discussed.
Temperature estimations for the most upper part of the shallow magmatic chamber of the of the Elbrus volcano were obtained on the basis of experimental measurements in the 180-meter deep borehole drilled through the glacier on the western plateau of Mount Elbrus. The estimations of deep temperatures have confirmed the possibility of existence of the magmatic chamber at depths of 0-1 km below sea level. At the same time the magnitudes of local heat flux were identified with enhanced precision.
Thus, the original scientific results provide significant extension to our knowledge on possible resumption of volcanic activity in the vicinity of Mount Elbrus.