

Modelling location of the fault strike based on the ground observations.

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In the zones of tectonic faults, main part of the deformation is localized in a narrow mylonitized zone, less than 1 cm thick. Main fault plane zone is limited by a zone of increased fracturing, in which the fracture density decreases exponentially with distance from a fault plane. The study of petrographic properties of rocks makes it possible to reveal structural changes caused by the action of past tectonic deformations. Chemical composition analysis makes it possible to investigate changings in the material composition of samples caused by the influence of superimposed metamorphic and metasomatic processes.

In this work, the exhumed contact area of the granite massif with the amphibolite massif, located on the left bank of Lake Baikal, near the Buguldeyka village, was chosen as the object of study. At the selected area, 83 rock samples were taken with a spatial step from 10 cm to meters. Each selected sample had an accurate reference to GPS coordinates, its exact position in the rock massif was photographed, and each sample was definitely oriented on the surface. For each sample, a petrographic description was made and the chemical composition was determined.

For a chemical composition data, a cluster tree was constructed using minimum spanning tree algorithm in the Chebyshev metric. Three clusters of samples were clearly distinguished, which characterize various structural elements of the studied zone. Selected elements are also distinguished according to the grade of deformation one of the results of the petrographic description.