



For how long stress state can be preserved in sedimentary and magmatic rocks

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Elastic characteristics of the Kola Superdeep borehole (SD-3) core have been investigated by means of the acoustopolariscopic method (Gorbatsevich, 1995). The core samples were collected from a shear zone, located in the interval of 1.7-1.9 km depth. The geological cross-section of this interval represents an alternation of layers of metamorphic sedimentary rocks and magmatic rocks. The interval is distinguished by significant variations of borehole wall strength, which is expressed in formation of break-outs. Break-outs appear mainly in near contact parts of ore-bearing metaperidotite bodies. It is established, that core samples of metaperidotites from the given interval have high elastic anisotropy in contrast with poorly anisotropic metamorphic sediments (aleurolites and phyllites) of the country rocks. A difference in elastic – anisotropic characteristics of magmatic and sedimentary rock samples and the data on the borehole diameter permits to make a conclusion, that stress, caused by tectonic events can be preserved much longer in magmatic rocks than in sedimentary, which is apparently stipulated by rheological features of rocks.