



The Paleoproterozoic Kolvitsa anorthosite massif: New Data on the U–Pb Age and Geochemical Features of Zircon

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The rocks and minerals of the Kolvitsa anorthosite massif are studied by complex isotopic–geochronological and geochemical (U–Pb, Sm–Nd, REE contents of zircons) methods. The isotopic U–Pb age (2448 ± 5 Ma) of single zircon grains, which were extracted from metagabbro of the block, is consistent with previous data on the rocks of the Kandalaksha anorthosite block. According to Sm–Nd studies of minerals of the metamorphic complex (apatite, sulfide minerals, garnet) and rocks of the block, the age of their metamorphic transformations is 1985 ± 17 Ma. The calculated temperature of the closure of the U–Pb system and crystallization of zircon of metagabbro of the Kolvitsa anorthosite massif is 778 C. The REE patterns of single zircon grains indicate their magmatic origin. This work was supported by the Russian Foundation for Basic Research (project no. 16-05-00305, 16-05-00367, 18-35-00246, 18-05-70082), the Presidium of the Russian Academy of Sciences (program no. 1.48).