



## **U-Pb zircon dating of metamorphic rocks of the northern Pechenga region (Kola-Norwegian Terrane, Baltic shield).**

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The Kola-Norwegian Terrane is composed of granite-gneisses and migmatites with relics of biotite-plagioclase, biotite-amphibole-plagioclase gneiss, amphibolite, garnet-biotite-plagioclase gneiss [Balaganskiy et al., 1998]. According to the structural-metamorphic scale of N.Ye. Kozlova (personal communication), the most ancient rocks represented in the “Pereval” and “Polygony” exposures are garnet-biotite gneisses with gabbroid bodies embedding. The quartz metasomatites are developed on the border of metagabbroids and gneisses. Within the “Nemetskaya Buhta” exposure the pegmatite veins cut the diorites.

The samples for U-Pb dating were taken from garnet-biotite gneiss (N VI; N 9821; N 9802), pegmatite (N IV), metagabbroids (N II) and quartz metasomatites (N III).

Thus, the following age sequence was established for the exposures “Pereval” , “Polygony“ and “Nemetskaya buhta”:

2810±150 Ma – garnet-biotite gneisses metamorphism, 2724±27 Ma - magmatic zircon crystallization in diorites, 2620±16 . – pegmatite vein crystallization, 2587±5 Ma – gabbroid implement, 2507±7 Ma - thermal process associated with gabbroid foliation, 2503±67 Ma – quartz metasomatites.