



Archaean geochronology of the Murmansk domain (Kola peninsula, NE Baltic Shield): U-Pb and Sm-Nd data

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The Murmansk domain is located in the eastern part of the Kola Peninsula (NE Baltic Shield) and consists mainly of plagiogranitoids and plagiomicrocline granites. Plagiogranites contain a plenty of xenoliths of amphibolites, biotite-, amphibole-biotite and biotite-amphibole gneisses, diorites, and two-pyroxene schist which are considered to be xenoliths of the basic rocks in primary - crust granitites or relicts of more ancient magmatic basement, altered by granitization processes or a product of structural - metamorphic reorganization of the uniform stratified complex of primary - crust granitoids (hypersthene diorites).

One of problems in understanding of a geological history of this structure is careful geological studying with attraction of the modern geochronological data for the subsequent opportunity of correlation of the Murmansk domain with similar Archaean structures of the Kola Peninsula, the Canadian Shield and Greenland.

Now new geochronological results (U-Pb zircon) are obtained for some rock complexes spatially placed in the eastern part of the Murmansk domain. U-Pb zircon age for biotite gneisses is 2724 +/-7 Ma. The age of zircon from xenolith of amphibolites is determined as 2739 +/-7 Ma. Plagiogranites from different parts of the investigated territory gave U-Pb ages 2771 +/-10 Ma and 2748 +/-7 Ma, respectively. For diorites U-Pb zircon age is obtained - 2717 +/-7 Ma. The given data testify to the Late Archaean time of formation of the investigated complexes of the Murmansk domain with ages, limited by an interval of 2.7-2.8 Ga. These data may correspond either to the time of rock crystallization or to the time of metamorphic processes. Sm-Nd data for all studied rocks of the Murmansk domain fall in the time span 2.8 – 3.1 Ga. These data suppose more ancient source for huge mass of granitoids of the Murmansk

domain.

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