

## **Mantle sources of polyphase Paleoproterozoic Monchetundra massif according by the isotopic- geochemical Pb-Nd-Sr data (northeast of the Fennoscandian Shield)**

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The Monchetundra massif is located in the north-east of the Fennoscandian Shield, in the central part of the Kola region and belongs to the Kola belt mafic-ultramafic intrusions of the East Scandinavian Large Igneous Province [1] with Pt- Pd deposits and ore occurrences such as the Mt Generalskaya, Volchetundra massif, Monchepluton, Imandra Lopolith and the Fedorovo-Pansky massif. From 2004 to 2016, exploration activities carried out by the Terskaya Gornaya Kompaniya first discovered the Monchetundra deposit, including Loipishnune and West Nittis [2], at the junction zone of Monchetundra and Monchepluton intrusions.

The origin of mafic-ultramafic intrusions, which host a number of Cu-Ni and Pt-Pd deposits, is a result of extensive magmatic activation of the Fennoscandian Shield during the period of 2520-2400 Ma. All these massifs show similar isotope-geochemical Nd-Sr and U-Pb features, but there are rocks in the Monchetundra massif with anomalous Nd isotopic characteristics compared with those in host rocks. The results of new isotope-geochemical Pb-Nd-Sr data of the Monchetundra massif mafic rock groups showed various features between each of varieties. But in common for all main age groups of massif rocks,  $\epsilon_{Nd}$  values from +4 to -3, and low ISr and Pb/Pb values reflect a depleted mantle source and low grade of crust contamination. The varieties of these features are compared primary with a evolution of mantle source. In addition, a large number of isotope-geochemical and geochemical marks of various mantle reservoirs like a EM-1, OIB, E-MORB, SCLIM are registered in the massif.

The reported study was funded by RFBR according to the research projects № 18-35-00152 and 18-35-00152.

References:

[1]. Mitrofanov, F.P., Bayanova, T.B. et al. (2013) *Geology of Ore Deposits* T 55 №5: 305-319;

[2]. Grohovskaya T.L., Lapina M.I. et al. (2003) *Geology of Ore Deposits*, t. 45, №4, p. 287-308.