

## **MANTLE PLUMES IN THE EARLY PALAEOPROTEROZOIC (2.5-2.0 Ga) TECTONICS: EVIDENCE FOR THE BALTIC SHIELD**

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In the early Palaeoproterozoic the eastern Baltic Shield was characterized by existence of two cratons (Karelian and Kola) and the Lapland-Umba Granulite Belt between them. The latter was surrounded by transitional nappe-folded zones. The cratons were developed as continental rift zones with volcanosedimentary belts, dyke swarms and large layered intrusions. But, they were characterized by magmatism of the siliceous high-Mg (boninite-like) series, which on their major, rare and rare-earth element contents was close to the Phanerozoic subduction-related magmas. According to geochemical and isotopic data ( $\epsilon_{\text{Nd}} = -1$  to  $-2$ ) these magmas had mantle-crustal origin and were formed as a result of crustal contamination of high-temperature mantle-derived magmas during their ascending.

A symmetric regional structural-metamorphic zonation evolved through the area characterized by gradual increase of deformations and metamorphism from low-grade toward to the high-grade terranes. This type of tectonics could be described in terms of plume-tectonics. Geological evidence of plate-tectonics in the region are fixed only from 2 Ga ago, practically simultaneously with appearance of a new type of magmas - geochemically enriched Fe-Ti picrites and basalts, similar to the Phanerozoic within-plate magmas which origin was linked with ascending of mantle plumes another composition.