

ANOMALOUS HIGH CONCENTRATIONS OF COMMON Pb IN ZIRCONS FROM THE LAPLAND GRANULITE AND TANAELV BELTS (RUSSIAN LAPLAND)

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Zircons from rocks of the Lapland Granulite and Tanaelv Belts (Yaurzero region, Russian Lapland) have been investigated by U-Pb method. Anomalous high concentrations of common Pb have been found in zircons from amphibolites and Fe-Mg lithologies of felsic granulites. Zircons from amphibolites are morphologically identical to those from granulites (isometric to short prismatic, pure, transparent and colorless) and are of the same age of 1890 ± 10 Ma. The concentration of common Pb in zircons from amphibolites is 20-50 ppm, in zircons from granulites 80-150 ppm. Such concentrations of common Pb are rather rare for zircons since there is no affinity between Zr and Pb and so natural zircons tend to reject Pb during growth. No mineral inclusions containing common Pb such as galenite, plagioclase etc have been revealed by ion microprobe studies. Experimental works (Watson et al., 1997), showed that compatibility of Pb increased in fluid-grown, low-temperature zircons, so high concentrations of common Pb could be characteristic for zircons from hydrothermal and wet-metamorphic rocks. Thus, formation of such type of zircon can be related to hydrotational processes, which are widely spread in the studied rocks.