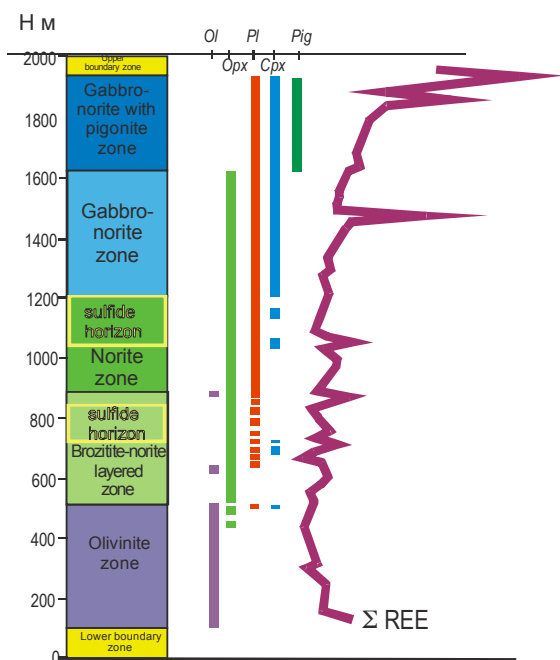


The behavior of REE and sulphide mineralization in Kivakka layered intrusion (Northern Karelia, Russia)

YA. V. BYCHKOVA¹ AND E. A. MINERVINA¹

¹IGEM RAS, Moscow, Russia, yanab66@yandex.ru

Concentrations of REE were determined in rocks by ICP-MS and in minerals (pyroxene, plagioclase) by LA-ICP-MS in rhythmic layered Series of Kivakka layered intrusion (Northern Karelia, Russia). The concentrations and ratios of REE in minerals remain unchanged throughout the section of massif and correspond to distribution coefficient mineral-melt. REE concentrations in the rocks considerably depend on the ratio of cumulus-intercumulus, which suggests that the concentration of REE in rocks can be used as a criterion for the cumulus density. The analysis of the distribution of sulphide ore minerals in layered intrusion Kivakka, as well as sulfide horizons, show that cumulus in this horizonz is significantly denser than in the surrounding layers. This confirms the previously proposed mechanism of both rhythmic layering, and the appearance of sulfide horizons, not correspond to thermodynamic parameters of basalt magma sulphide-silicate segregation. The resulting distribution allows us to understand patterns of localization of sulfide mineralization in layered intrusions.



This work was supported by RFBR research project No 15-05-05501.