



## Trace element compositions of the mantle peridotite xenoliths from Primorie (Russian Far East)

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The trace element compositions were determined for 30 Cpx and some Cr spinels from the mantle xenoliths by LAM ICP using Finnigan ELEMENT with the YAG Nd 266 Laser Probe laser system (analyst S.V. Palessky) in Analytic centre of IGM SB RAS. Cpx from Kamku river show nearly flat or inclined REE patterns ( $La/Yb \sim 2.5$ ) with the depressions in Ta, Nb and less in Zr. Similar patterns show Cpx from volc. Medvezhy showing higher fluctuations in LREE  $0.1 > La/Yb > 1$  with the depressions in HFSE. The Cpx from Tuttocha lava plateau show small depletion in LREE correspondent to 1-2% melting in Sp facie but one grain showing the spectrum with humped LREE probably refer to the interaction with basalt melt. CPx from the volc. Mount Kurgan show slightly humped in MREE convex upward patterns. Some of them reveal the depletion in LREE Zr, Hf, Nb, Ta which is common for the spinel peridotites subjected to the reactions with the oxidized melts crystallized oxides. Another one grain show  $La/Yb > 1$  correspondent to presence of small amount of Gar in the melting source and flattened incompatible part of TRE spectrum. The Cpx from Kopy reveal common REE slightly depleted LREE pattern and deeper Zr, Ta. minima. Podgelbanochny Cpx (Ionov et al., 1995) show stronger inclination referring to 2-5 % of Gar in melting source and progressively depleted incompatible part of the TRE spectrum as well as minima in Pb and smaller in Zr.

The Cr spinels from Tuttocha show flattened patterns depleted LREE or U shaped patterns with peaks in Pb, Nb, U. But for Cr- Sp from Medvezhy the REE inclination is positive, the Pb dip is higher, and small Y depletion exists.

So the mantle in the Southern part of Primorie and volcanoes of the latest activity show more inclines REE patterns with the garnet signatures and LREE enrichment and higher  $La/Yb$  ratios corresponding to the lower melting degrees.

In general there is now evidences for the support of the low crust and mantle lithosphere delamination which should be accompanied by the fluid flows with the significant amount of the LREE and other incompatible elements. The garnet signatures visible in some patterns mainly correspondent to the impregnations of the peridotites by the basaltic melts born in garnet facie. The plume basalts also have no evidences of the essential admixture of the eclogitic or low crust material which should participate in the melting during the delamination events.

In general this is marking the decreasing of the heat flow and activity of the plume caused the creation of the lava plateau. The thermobarometric calculations for the rather large set of mantle xenolith also support these tendencies. Grant RBRF 11-05-00060.