



## **Isotope and trace element geochemistry of lamprophyres and syenites from different areas of South-Chuya complex, SE Altai.**

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Major and trace elements and radiogenic isotope data are reported for lamprophyres and syenites of South-Chuya complex associated with ore districts in South East of Gornyi Altai, Russia. Dikes of lamprophyres form big area, elongated from north-west to south-east. Within the area of complex dikes distribute irregularly accompanied the fault zones. Lamprophyres of three largest areas, named Aktash, South Chuya and Yustyd were characterized in terms of geology, petro- and geochemistry, isotopic composition.

Some of the lamprophyres judging by the high  $mg' > 60$  reveal mantle signatures. They reveal round TRE patterns typical of the primitive low degree partial melts but with the negative Nb- Ta anomalies. The others with the lower  $mg'$  suggest their differentiation and contamination in crust material. They reveal slightly lower level of TRE and lower troughs of all HFSE.

All dikes had intruded in the period of 250-235 Ma, have similar mineralogical, petro- and geochemistry characteristics which were the reasons for unite all of them in one complex. On the most of geochemistry diagrams dikes from 3 areas form their own, but intersected clusters. But on the isotopic diagrams (Sm/Nd and Rb/Sr systems) they show the principle dissimilarity between dikes from various areas. Yustyd lamprophyres initial isotopic characteristics are close to the BSE. The south-chuya rocks isotopic compositions are more enriched by  $^{87}Sr/^{86}Sr$  and have negative  $\epsilon Nd$  (-2.84..-4.05). Contamination by the lower crust material suggested at the early stage during the formation of the lamprophyres. Bu the Yustyd lamprophyres were contaminated also during the ascend by the upper crust.

Two competitive hypotheses n the isotopic composition are dicussed: 1) different sources or 2) different proportions between the material from the same sources, which ensemble generate the parental magma for the rocks.