



## Three types of PGE spectra in basalts of Kamchatka

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Kamchatka arc system is composed of two parallel arcs; the frontal arc of the Eastern and Southern Kamchatka and rear arc of the Sredinny ridge. Low-K and moderately-K basalts with typical arc trace element patterns are the dominant rock types in the Eastern Kamchatka. Sredinny ridge and the Southern Kamchatka are characterized by moderately-K and high-K 'arc'-type basalts. Sredinny ridge is unusual for presence of alkaline basalts with trace element patterns typical for many intracontinental rifts. We analyzed low-K, moderately-K and alkaline basalts from the Eastern Kamchatka and Sredinny Ridge by isotope-dilution ICP-MS for PGE (Ir, Os, Ru, Pt and Pd) and Re. For comparison we analyzed alkaline basalts from Zhom-Bolok volcanic group of the Baikal rift. Low-K, moderately-K and alkaline basalts of the Kamchatka show distinct PGE chondrite-normalized patterns irrespective of their position within the arc system. Low-K basalts are generally higher in all PGE compared to moderately-K basalts, though the both types show similar patterns with low Os, Ir and Ru and high Pt and Pd chondrite-normalized concentrations. The alkaline basalts show depletion of Ir and Pd compared to the moderately-K basalts at comparable concentrations of other PGE. Re concentrations in all the three types are comparable due to post-eruption degassing. Alkaline basalts of the Baikal rift are the most depleted in PGE among studied, though their PGE+Re chondrite-normalized patterns are similar to those of the alkaline basalts of Kamchatka. We couple PGE data with other trace elements and Sr-Nd-Pb isotopes and explain their variations by variable degrees of partial melting of two sources beneath Kamchatka; the mantle wedge and recycled Kula slab. Supported

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