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**Platinum-group element contents of Karelian kimberlites:  
implications for the PGE budget of the sub-continental lithospheric  
mantle**

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**Abstract.** We present high-precision isotope dilution data for Os, Ir, Ru, Pt, Pd and Re in Group I and Group II kimberlites from the Karelian craton, as well as 2 samples of the Premier Group I kimberlite pipe from the Kaapvaal craton. The samples have, on average, 1.38 ppb Pt and 1.33 ppb Pd, with Pt/Pd around unity. These PGE levels are markedly lower, by as much as 80%, than those reported previously for kimberlites from South Africa, Brazil and India, but overlap with PGE results reported recently from Canadian kimberlites. Primitive-mantle-normalised chalcophile element patterns are relatively flat from Os to Pt, but Cu, Ni and, somewhat less so, Au are enriched relative to the PGE (e.g., Cu/Pd >25.000). Pd/Ir ratios are 3,6 on average, lower than most other mantle melts. The PGE systematics can be largely explained by two components, (i) harzburgite / lherzolite detritus of the SCLM with relatively high IPGE (Os-Ir-Ru) / PPGE (Rh-Pt-Pd) ratios, and (ii) a melt component that has high PPGE/IPGE ratios. By using the concentrations of iridium in the

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