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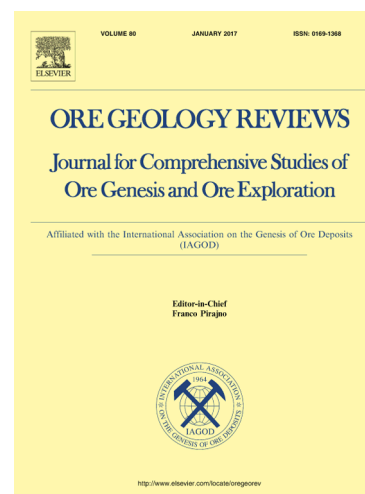
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Ruthenium in chromite as indicator for magmatic sulfide liquid equilibration in mafic-ultramafic systems

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ABSTRACT

The platinum-group element ruthenium (Ru) is an important petrogenetic tracer of Earth's accretion history, core-mantle interaction, mantle evolution and the exploration for magmatic sulfide deposits. However, its geochemical behavior in mafic-ultramafic systems is still not fully understood, which limits its usefulness in the predictive modelling of geochemical systems.

To further develop the use of Ru as a petrogenetic tracer, we analyzed the Ru contents of chromites from a global sample set of komatiites, komatiitic basalts, and ferropicrites by laser ablation ICP-MS and Carius tube isotope dilution ICP-MS analysis. The Ru data are combined with full major and minor element microprobe analyses. The data show that two groups of chromite can be distinguished on the basis of their Ru contents. This bimodal distribution occurs

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