

## **Minor and trace elements fingerprints on spinels of mantle xenoliths from North and South America**

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The content of minor and trace elements (Sc, Ti, V, Mn, Co, Ni, Zn, Ga) in spinels is widely used to infer the nature of parental melts and geodynamic setting of chromitites, as chemistry of spinel is highly sensitive to the geochemical characteristics of its parental melts, which is related to the tectonic setting in which the melt is produced. However, the studies on spinels from mantle xenoliths are scarce despite of their potential to discriminate partial melting and metasomatic processes in the lithosphere.

We report LA-ICP-MS analysis of spinels from lherzolite xenoliths that have sampled domains of the subcontinental lithospheric mantle (SCLM) from North and South America that presumably record different melting and/or metasomatic processes. These xenoliths come from the volcanic fields of: i) Santo Domingo and Ventura-Espíritu Santo in Central Mexico; and i) Pali Aike and Coyhaique in southern Patagonia.

When normalized to spinel from MORB sources, the analyzed spinels from the SCLM show two different patterns of minor and trace elements: i) patterns with a positive slope, produced by depletion in V, Sc and Ti, and enrichment in Ga, Ni, Zn, Co and Mn; ii) relatively flat patterns with positive anomalies in V, Ti and Zn, and negative anomalies in Sc, Ga and Ni. The observed differences in the distribution of minor and trace elements may be related with melting and metasomatic processes that could have take place in the SCLM. Therefore, LA-ICP-MS analysis of spinels from mantle xenoliths is a promising tool for better understanding processes capable of forming and modifying the lithospheric mantle composition.