CHARACTERISATION OF THE METASOMATIC AGENT IN MANTLE XENOLITHS FROM DEVES, MASSIF CENTRAL (FRANCE) USING COUPLED IN-SITU TRACE- ELEMENT AND O, SR, ND ISOTOPIC COMPOSITIONS

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Abstract
Spinel lherzolites and harzburgites from Mont-Briançon and Marais de Limagne in the Devès volcanic district display coarse-grained to porphyroclastic microstructures and the modal content of volatile-bearing phases increases with the degree of deformation. Clinopyroxene and/or spinel are partly or totally reacted to amphibole. The coupled interpretations of traces, REE and O-Sr-Nd data on clinopyroxene and amphibole indicate that the metasomatised mantle beneath the Devès is a mixture of depleted and enriched mantle associated with an alkaline, HFSE-poor, LREE-, U- and Th- rich compositions of carbonate-rich silicate fluid/melt metasomatic agent. Oxygen isotopes and REE data of clinopyroxene-amphibole pairs indicate an [La/Yb]N enrichment related to an increasing metasomatic agent/rock ratios.