

**PETROLOGICAL AND GEOCHEMICAL STUDIES OF MANTLE XENOLITHS
FROM RIO NEGRO PROVINCE, ARGENTINA**

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The Comallo, N. Patagonia, are depleted sp-lherzolites, sp-harzburgites, wehrlites and clinopyroxenites. The studied samples are fine-grained with a dominant well-equilibrated equigranular texture whereas protogranular and porphyroclastic textures are rare. The rock forming minerals are olivine, ortho- and clinopyroxene and spinel. Relictic amphibole and phlogopite are present as well. The amphibole, where present, has been destabilized and shows breakdown reaction at the margin, forming second generation of ol, cpx and sp.

The Fo content in the lherzolites and harzburgites range from 90.8 to 92.0, and in the wherlites from 89.0 to 90.0. Clinopyroxene is diopside with 3.0 wt% Al₂O₃ in the rim and up to 4 wt% in the core. Spinel is Cr₂O₃-rich with Cr# = 0.426.

LA-ICP-MS analyses on clinopyroxene show that the studied mantle xenoliths are strongly depleted in HREE [(Dy/Lu)_N = 0.4-0.7] and LREE [(La/Sm)_N = 0.3-0.8] but enriched in MREE [(Sm/Nd)_N = 1.3-1.7]. The HFSE compared to their neighbour elements exhibit strong negative anomalies suggesting that the studied peridotites are the residues of high degree of partial meltings. Using the model of fractional melting the calculated extraction of basaltic components is high and ranges between 30 and 33%.

The presence of disseminated amphibole and phlogopite, indicates that the lithospheric mantle underneath Comallo in N. Patagonia, has experienced limited modal metasomatism, whereas the trace elements in clinopyroxene show they have barely been affected by this metasomatism.