

CARACTERIZACIÓN PETROGRÁFICA DE XENOLITOS ULTRAMÁFICOS DEL NORTE DE PATAGONIA

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ABSTRACT

Patagonian mantle xenoliths occur in Pliocene-Quaternary alkali basalts with outcrops extending from Rio Negro (41° S) to Santa Cruz (52° S) province. Spinel harzburgites are dominant followed by spinel lherzolites and websterites. Garnet-bearing xenoliths have not been recognized so far in this part of Patagonia, the only known occurrences being those of southernmost Patagonia.

A representative suite of mantle xenoliths was collected in Rio Negro province along a 230 km long profile extending from Comallo in the west to Prahuaniyeu in the east. Petrographic investigations have shown that the geographical distribution of textures is random and the dominant texture is equigranular (both tabular and mosaic) followed by porphyroclastic and the transitional types, indicating that the upper mantle in this region is tectonized. Modal metasomatism is documented for the first time in this region and it is represented by amphibole and phlogopite crystals and glass veins. Metasomatism is more pronounced in xenoliths showing the highest degree of tectonization. The prevailing occurrence of harzburgites indicates a depleted lithospheric mantle source.

Equilibrium p-T conditions were estimated using the two-pyroxene thermometer and the Ca-in-olivine barometer. High p-T conditions are recorded in spinel lherzolites and harzburgites which contain characteristic pyroxene/Cr-spinel symplectites. The temperatures range from 1260 to 1230 °C and pressures from 19 to 24 kbar.