

**INFLUENCIA DE LA MINERALOGÍA Y DEL METAMORFISMO EN LAS
PROPIEDADES MAGNÉTICAS DE LOS DEPÓSITOS ALPINOS
CROMOESPINELÍFEROS
El Complejo Los Guanacos, Pcia. de Córdoba**

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Abstract

This paper describes preliminary results about the mineralogy and magnetic properties of Los Guanacos ultrabasic complex, its host-rock and its ore deposits in a serpentinized matrix. Effects of metamorphism in mineralogy and magnetic properties are discussed. The data support the presence of ferromagnetic minerals within the serpentinised ultrabasic complex, which displays bulk susceptibilities ranging between 1×10^{-3} and 1×10^{-1} (SI), and define a broad positive magnetic anomaly related to arborescent secondary magnetite. The Mg — Al chromite deposits, typical of alpine magmatic process, are defined by paramagnetic chromite, showing low susceptibility values, around 1×10^{-3} , and no conclusive anomalies were found. The high amphibolite to granulite superimposed metamorphic conditions determined two deposit types in the complex: 1) chromiferous magnetite and ferrian chromite ore, that is composed by ferromagnetic minerals, showing the highest susceptibility, around 1×10^{-1} ; 2) Al — Fe — Mg — Cr — Ti spinel ore, composed by ferromagnetic and paramagnetic minerals, showing variation of the magnetic properties, susceptibility values around 1×10^{-2} ; both 1) and 2) define short wavelength, high amplitude anomalies. Retrograde metamorphism from amphibolite to greenschist facies determined the formation of ferrichromite rims in chromite grains together with secondary magnetite and produces conclusive anomalies associated to heterogeneous magnetic properties.