

THE EFFECT OF METASOMATIC PROCESSES ON THE CR-PGE MINERALIZATION OF THE FINERO COMPLEX (IVREA ZONE, SOUTHERN ALPS).

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The Finero Complex comprises a peridotitic core enveloped by concentric layers of femic and ultrafemic rocks. The central tectonitic peridotite is a compound unit where the main restitic harzburgite is intersected by patches of a dunite+chromitite association related to a triassic metasomatic event (207.4 ± 207 Ma), and by younger clinopyroxenitic dykes. Chromitites of the dunite+chromitite association form lenses and discontinuous layers up to 50 cm thick and host a heterogeneous distribution of PGM, dominated by laurite. Single chromite grains show anomalous mosaic zoning with a core to rim decrease of Cr/Al and Mg/Fe ratios where the rim is in contact with olivine and an increase of the same ratios where the rim is in contact with pyroxene. This zoning is due to the overlapping of a younger metasomatic event, related to the growth of REE-enriched amphibole films between pyroxene and chromite, to an older magmatic zoning. PGE chondritic patterns are strongly variable, ranging from IPGE-enriched to IPGE-depleted, with the first ones showing up to two order of magnitude lower PGE contents than the first ones. The highest PGE contents are related to clinopyroxene and amphibole free chromitites that underwent minor or no metasomatic interactions, while the lowest PGE contents are related to clinopyroxene and amphibole rich chromitites that interacted strongly with later REE enriched metasomatic fluids. Variability of PGE pattern shape is due to the different capability of metasomatic fluids to scavenge PGE, which follows the order: OsIrRuRh, while Pt and Pd are primarily depleted.