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Mineralogy and Chromitite absence in serpentinized mantle peridotites of Jandaq ophiolite (NE of Isfahan Province)

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Abstract: Mantle peridotites are one of the most important rock units of Jandaq ophiolite that are affected by numerous phases of dynamic and static serpentinization, and metamorphism. The main part of mantle peridotites is lherzolite. This ophiolitic association is covered by Paleozoic metamorphic rocks that are schist and marble. All olivines are changed to serpentine. Most of orthopyroxenes are bastitized and some of clinopyroxenes are changed to tremolite by metamorphism. Clinopyroxenes are the most resistant mineral against the metamorphism and alteration. Most of spinels are magnetitized, but in some cases the inner parts are fresh. Composition of chromian-spinels are the same in all mantle peridotites with Cr# = 0.46. Gabbros that intruded the peridotites are rodingitized. Peridotites of Jandaq ophiolite are abyssal peridotites that belong to spinel lherzolite facies. Crystallization temperature of pyroxenes in lherzolites ranges from 1041 to 1178 °C. One of the most characteristics of these peridotites is absence of chromitite that relates to lherzolitic system of mantle, low degree of partial melting, low activity of mantle in continual ascending melt production, and low Cr content of pyroxenes.

Keywords: *Jandaq ophiolite, Mantle peridotites, Lherzolite, Serpentinization, Metamorphism, Chromitite.*

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