

## OCEANIC RELICT TEXTURES IN THE MOUNT AVIC SERPENTINITES, WESTERN ALPS

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### ABSTRACT

The Mount Avic serpentinites derive from mantle peridotites that have been involved in several geodynamic episodes, from their formation in the Jurassic Tethys, to the subduction event and suture in the Alpine chain. The main steps of their tectono-metamorphic evolution are inferred by investigating the texture and mineralogy of selected samples. Some serpentinite samples show relict textures and mineralogy related to the emplacement in the oceanic realm and to the early Alpine evolution. Olivine and clinopyroxene porphyroblasts preserve relict mantle textures. Magnetite crystals include relict chromite at their core. Abundant pseudomorphs of antigorite on former porphyroblasts are present. Mineral composition of the pseudomorphous serpentine partly inherits the composition of former minerals (e.g., relatively Ti-rich antigorite replacing pyroxene). These observations support the hypothesis that the Mount Avic serpentinites derive from original mantle porphyroclastic peridotites. An early formation of Ti-clinohumite during oceanic serpentinization of mantle peridotites at relatively high temperature conditions, followed by HP subduction-related Alpine recrystallization, is proposed. The late orogenic history is characterised by transposition accompanied by greenschist facies minerals crystallization. In these samples, antigorite represents the main mineral phase, marking a pervasive, often mylonitic, foliation. The last generation of serpentine, that occurs as yellow fibres filling late extension veins, was formed during a Neo-Alpine brittle-ductile deformation stage.