

EVOLUTION OF RODINGITIC DYKES: METASOMATISM AND METAMORPHISM IN THE MOUNT AVIC SERPENTINITES (ALPINE OPHIOLITES, SOUTHERN AOSTA VALLEY)

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ABSTRACT

The Mount Avic ophiolite mainly consists of a large mass of serpentinites, which constitutes the base of a subunit of the Piemonte ophiolitic nappe. Serpentinites represent the mantle portion of the oceanic lithosphere of the Mesozoic Tethys and consist of antigorite-titanian clinohumite-diopside schists as products of oceanic metasomatism and tectono-metamorphic evolution of the Alpine orogeny, at the expense of abyssal peridotite mineral assemblage. The serpentinite mass includes metagabbro pods (without metasomatic alteration) and associated rodingitic dykes. Various rodingitic dykes can be distinguished on the basis of their mineralogical assemblages. The main assemblage consists of ugranditic garnet, chlorite \pm diopside \pm epidote \pm vesuvianite. We observed also some other peculiar rodingites such as vesuvianite-chlorite-, diopside-epidote-chlorite-, and diopside-chlorite-bearing rodingites, as distinctive of the Mount Avic massif, as well as rodingitic reaction zones and foliated rodingites with chlorite, diopside, or epidote. These mineral assemblages are strictly related to the chemistry of the protolith (probably mafic dykes within serpentinite), as well as to the oceanic rodingitization during the serpentinization event and to the Alpine evolution that affected the Mount Avic massif.