

UPPER CARBONIFEROUS EXTENSIONAL TECTONICS IN THE ARGENTERA MASSIF (EXTERNAL CRYSTALLINE MASSIFS, WESTERN ALPS)

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In the Paleozoic orogen of Europe, an extensional tectonic regime active during Permian and Carboniferous has been inferred by the tectonic and metamorphic evolution of the basement and of the Upper Carboniferous and Permian covers (ECHTLER & MALAVIEILLE, 1990; FAURE, 1995; GARDIEN et al., 1997; LOBKOWICZ et al., 1998).

In the Argentera-Mercantour massif (External Crystalline Domain of the Western Alps) scattered Upper Carboniferous continental sedimentary sequences have long been described (Faure MURET, 1955; MALARODA, 1970) but less is known about the tectonics which controlled their development.

The Upper Carboniferous deposits located at Punta Marges-Punta Barçon in the south-western sector of the Argentera massif, (Mollièresite of ROCCATI A., 1911, and SACCO, 1911), consist of conglomerates with minor sandstones and silts, transgressively lying upon the polymetamorphic para- and orthogneisses of the crystalline Malinvern-Argentera complex (FAURE MURET, 1955). In the crystalline basement a newly recognized pattern of the Upper Carboniferous extensional tectonics provides an evidence of the Paleozoic orogenic evolution within the Alpine orogen. An earlier high temperature foliation underlined by brown biotite and white mica is reactivated in greenschist facies conditions by an extensional crenulation cleavage. Kinematic indicators (s-c structures and asymmetric pressure shadows) are compatible with a north-eastern direction of extension. This tectonic imprint is interpreted as contemporaneous with the basin opening since it does not affect the sedimentary sequence. On the contrary

conglomerates and sandstones display a spaced foliation in the fine-grained fraction (e.g. CALLEGARI et al, 1974), and the clasts show asymmetric tails, in places recrystallized; similarly, in the basement a spaced and discontinuous foliation, marked by fine-grained with mica and opaque minerals, occurs.

The geometry of the foliation which reactivated both the cover and the basement indicates a shortening effect that may be attributed to Alpine upthrusting on the base of its regional orientation compatibilities.

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