

GEOLOGICAL MAPPING OF A UHP METAMORPHIC TERRAIN: THE SOUTHERN DORA-MAIRA MASSIF, WESTERN ALPS.

1ROLFO, F., 1COMPAGNONI, R., 2HIRAJIMA, T. and 1TURELLO, R.
1Dipartimento di Scienze Mineralogiche e Petrologiche, Torino, Italy; 2Department of Geology and Mineralogy, Kyoto, Japan

A classic example of UHP metamorphic terrain is the southern Dora Maira Massif, Western Alps, where crustal portions with similar lithologic association recrystallized at different high-pressure conditions during the alpine orogeny. A new 1:10.000 geological map was carried out over an area of about 40 km², by combining field work and data from a detailed petrographic and mineral chemistry study. Four tectonic units have been distinguished, which are characterized by different early-Alpine peak metamorphism. The Brossasco-Isasca Unit (BIU), characterized by early-Alpine coesite eclogite-facies recrystallisation, is composed of two lithostratigraphic complexes. The monometamorphic complex mainly consists of orthogneiss with relics of late-Variscan granitoids and layers of pyrope-bearing whiteschist. The polymetamorphic complex consists of metapelite with relics of Variscan amphibolite-facies mineral assemblages, marble, eclogite, and phengitic orthogneiss. Relics of metagranitoids with xenoliths of paraschist, indicate that the BIU is a coherent portion of continental crust. The San Chiaffredo Unit is a small tectonic slice, composed of a Variscan continental crust similar to that of the BIU, which suffered quartz eclogite-facies alpine recrystallization. The Rocca Solei Unit is a tectonic slice, composed of a Variscan continental crust similar to that of the BIU, which suffered early-alpine quartz eclogite-facies recrystallization. The polymetamorphic basement includes garnet-chloritoid micaschist with relics of pre-alpine staurolite and minor eclogites, and was intruded by granitoids, now augen gneiss. The Pinerolo Unit mainly consists of graphitic micaschists, which locally contain chloritoid and garnet with a peculiar comp