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## Structural and geological mapping of the Gran Sometta-Tournalin ridge (Aosta Valley, Italy)

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We present a new geological and structural map of the Gran Sometta -Tournalin ridge (Valle d'Aosta). In this area we have Penninic ophiolitic units of the Combin (Co) and Zermatt-Saas (ZS) zones. In addition, in this area the continental cover sequence of the Pancherot-Cime Bianche-Bettaforca (PCB) unit crops out, close to the base of the Combin zone. The PCB and Co are characterized by Alpine greenschist facies assemblages, while the ZS is characterized by eclogitic assemblages. The greenschist and HP complexes are juxtaposed along the extensional Combin Fault Zone.

Our detailed 1:5000 map allowed reconstructing in 3D, and with a high level of detail, the spatial and crosscutting relationships between metamorphic layering (e.g. calcschists and metabasites in the Co), ductile foliations and shear zones, semi-brittle features (e.g. extensional crenulation cleavage – ECC - along the Combin Fault Zone), and post-metamorphic brittle faults.

The metamorphic layering and foliations are sub-horizontal in this area, and the ECC associated to the Combin Fault results in large components of horizontal stretching. These features are crosscut by two sets of high-angle normal faults, of Oligocene and Miocene age (according to literature), and, thanks to the favourable exposure and numerous structural data, we have been able to reconstruct these structures and their relationships in 3D.