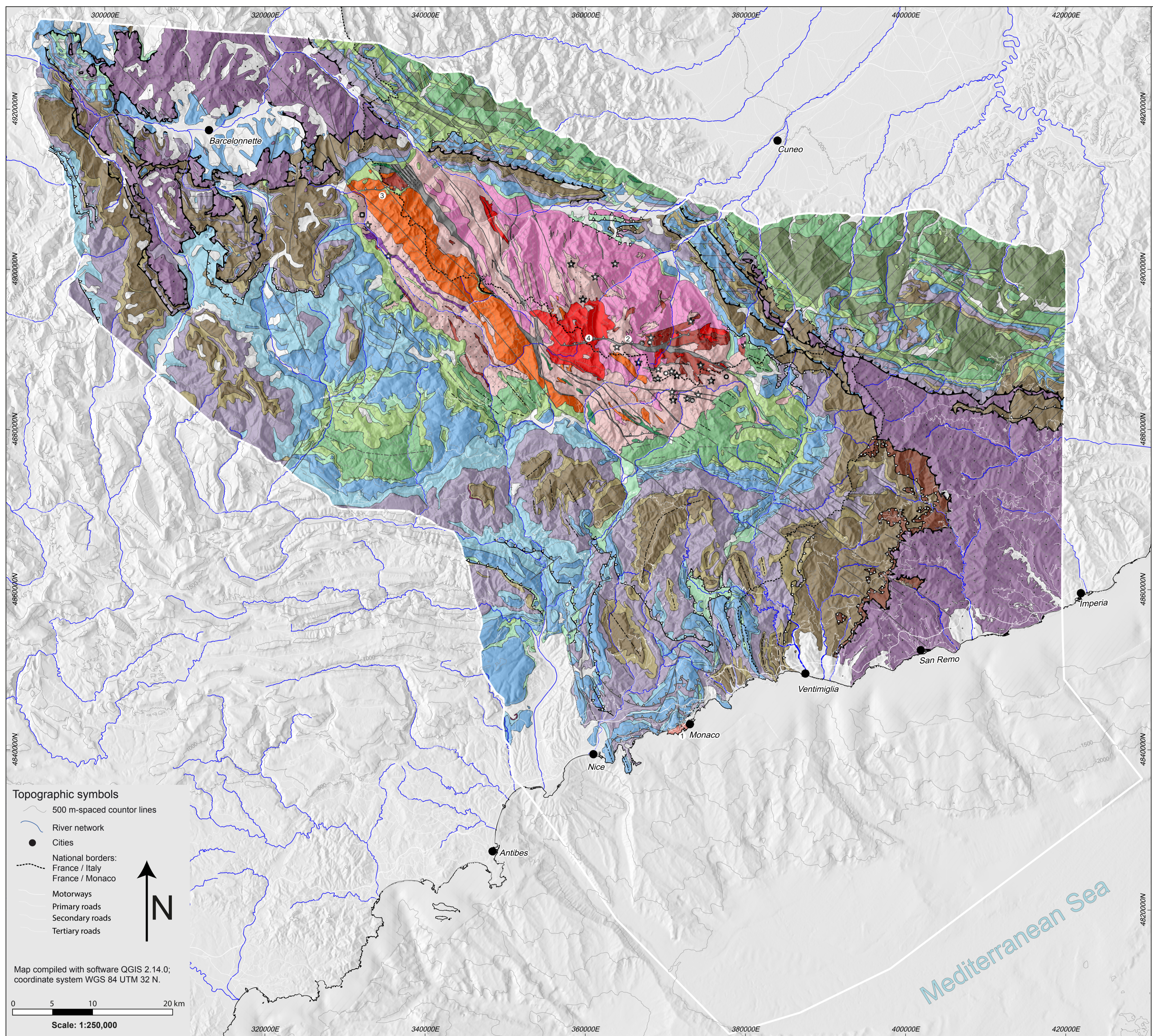


Event 8 -- Apenninic subduction (28 - 23 Ma)



Legend of tectonic and petrogenetic events

8 -- Apenninic subduction

Late Oligocene (28 - 23 Ma)

8-1 Andesitic breccias and tuffs (late Oligocene, syn-subductive volcanism)

7 -- Alpine collision

Late Eocene to Oligocene (45 - 23 Ma)

7-1 Grès d'Annot, Schistes à blocs, Flysch Noir, and Flysch of Ventimiglia (late Eocene - early Oligocene, foreland basin)

7-2 Flysch of Baiardo (Priabonian - early Oligocene, foreland basin)

7-3 Nummulitic Limestones and Giobignina Marls (late Lutetian to Priabonian, foreland basin)

6 -- Alpine subduction

Late Cretaceous to early Eocene (100 - 45 Ma)

6-1 Conglomerates, limestones, and red clay with mica (latest Cretaceous to middle Eocene, lacustrine and fluvial environments)

6-2 Helminthoides Flysch (Cretaceous - Paleocene, subduction trench)

6-3 Turbiditic limestones and marls (Late Cretaceous, turbidite basins)

5 -- Alpine rifting, development of passive margins, and ocean formation

Jurassic to Early Cretaceous (201 - 100 Ma)

5-2 Limestones and marly limestones, marls, sandstones, and marly limestones (Early Cretaceous, post-rift pelagic basins)

5-3 Limestones and dolostones (Jurassic, syn-rift basins and structural highs)

4 -- Post-Variscan lithospheric thinning

Permian to Late Triassic (299 - 201 Ma)

4-1 Marlstones, dolostones, gypsum-anhydrite evaporites, and dissolution evaporitic breccias (Late Triassic, transgressive and regressive cycles)

4-2 Evaporites, dolostones, and limestones (Middle Triassic, carbonate platforms and basins)

4-3 Conglomerates, sandstones, arkose sandstones, pelites, and schists (Permian, intra-continental basins)

4-4 Porphyroids (Permian, intra-continental basins)

3 -- Erosion / dismantling of the Variscan mountain chain

Late Carboniferous (320 - 299 Ma)

3-1 Mica-bearing sandstones, conglomerates, quartzites, and carbonaceous schists (late Carboniferous, immature continental basins)

2 -- Variscan collision

Late Devonian to early Carboniferous (375 - 320 Ma)

2-1 Granites

2-2 Amphibolites

2-3 Anatexites with cordierite

2-4 Meta-granodiorites

2-5 Migmatitic orthogneisses

2-6 a. Migmatitic paragneisses; b. Migmatitic meta-greywackes

1 -- Variscan subduction

Early Devonian (400 - 375 Ma)

1-1 Serpentinites

1-2 Eclogites

1-3 Marbles

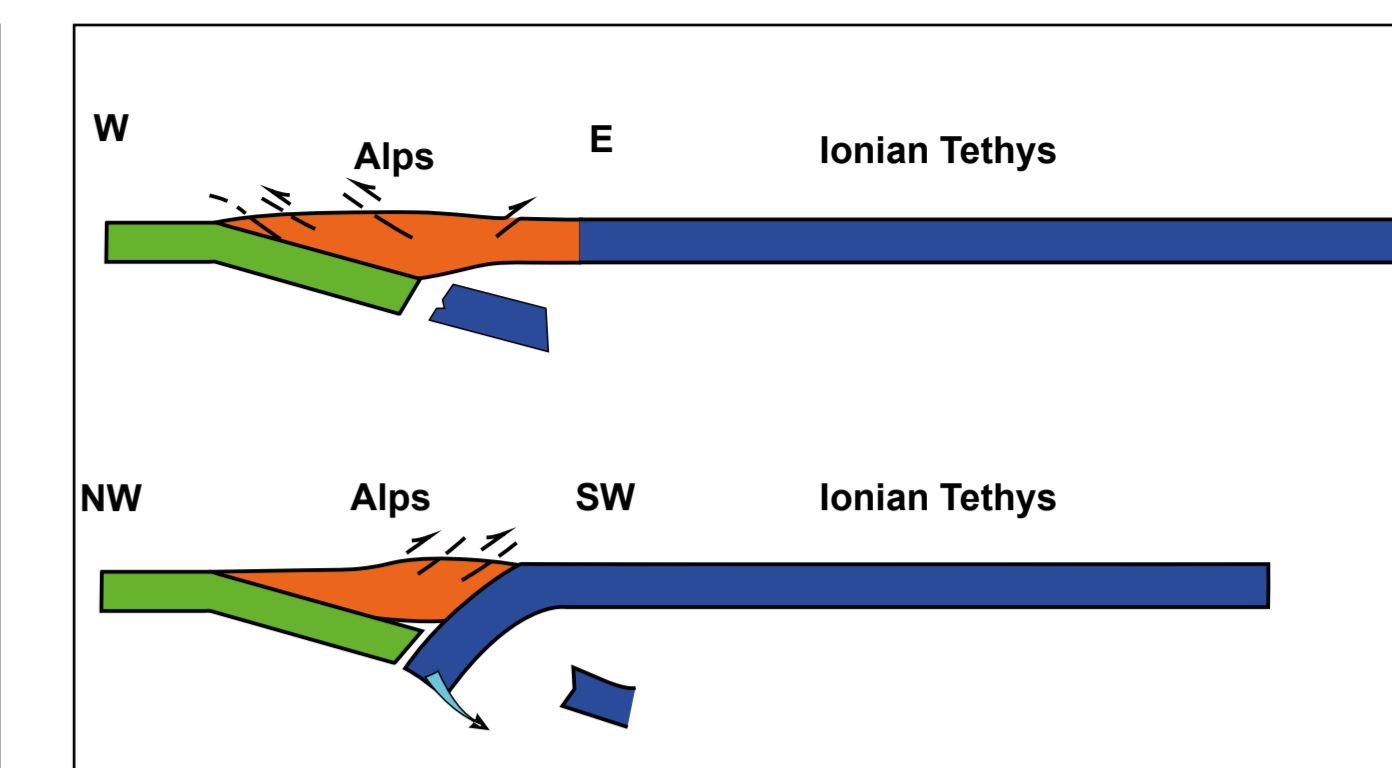
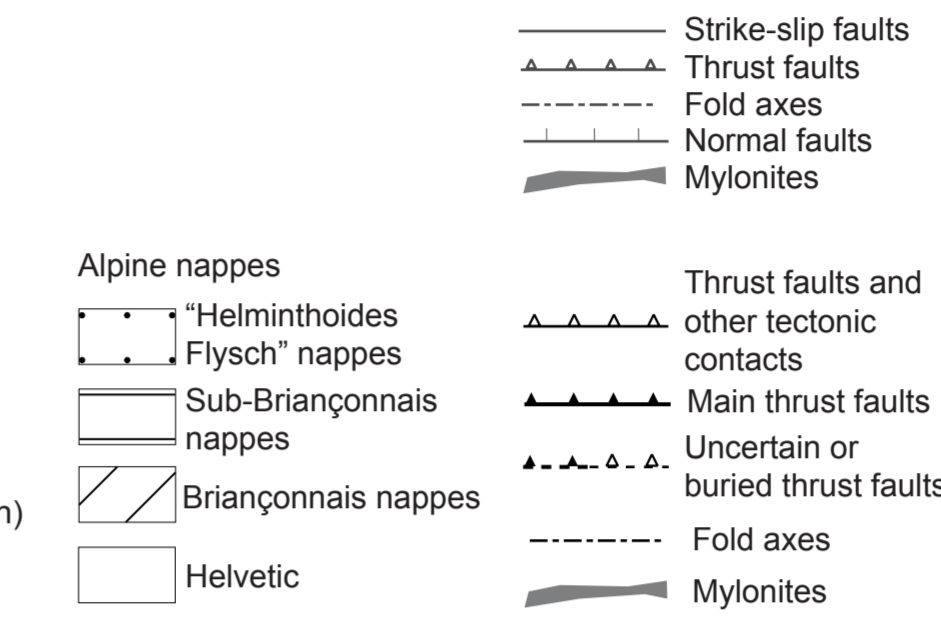


Fig. 6 - Simplified representation of the transition between Alpine collision and Apenninic subduction (modified after Carminati & Doglioni, 2005). Note the difference in orientation of the two lithosphere-scale cross-sections; the dipping inversion of the subducting oceanic slab of the Ionian Tethys marks initiation of the Apenninic tectonic cycle. Event 8.

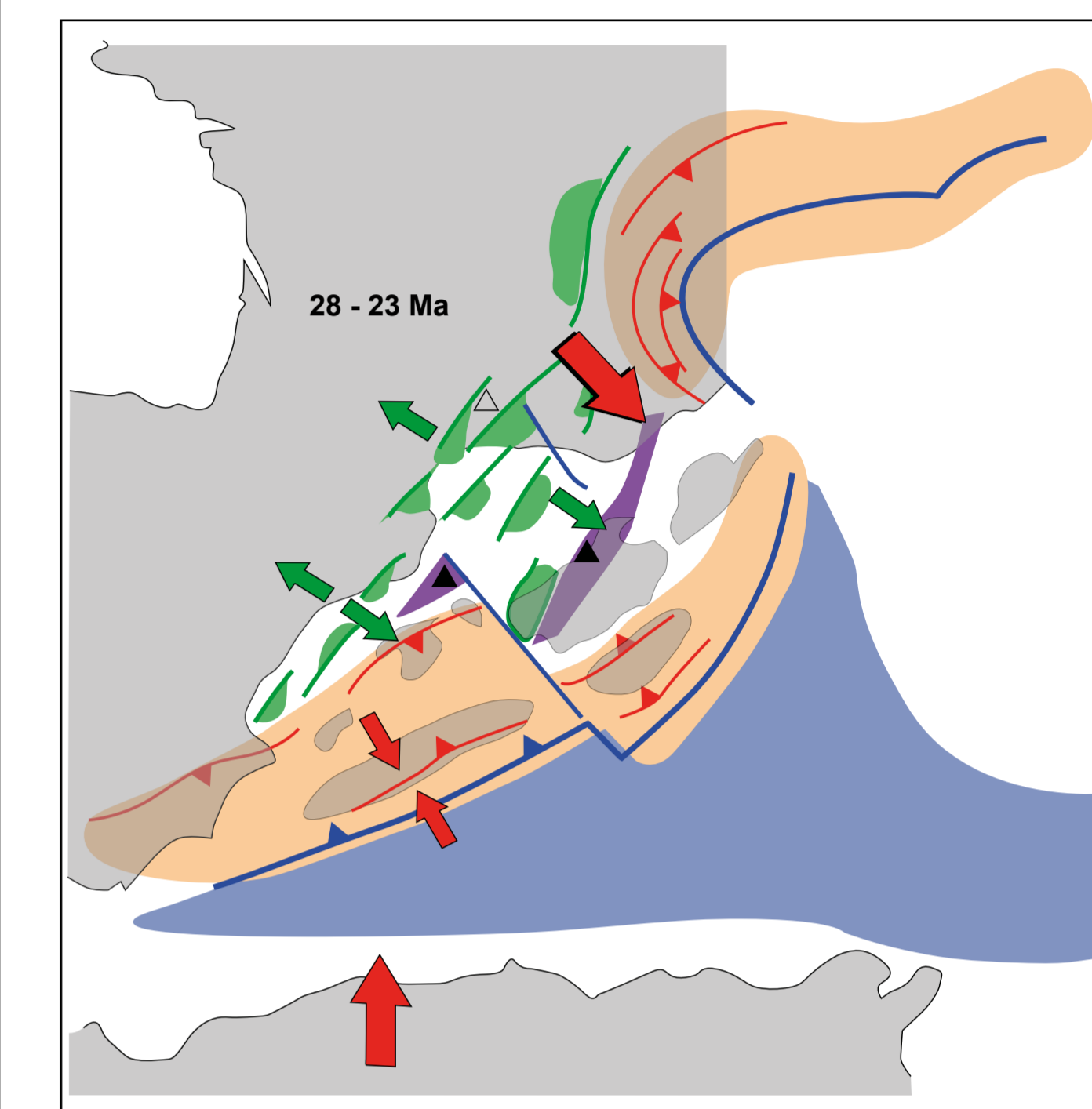


Fig. 5 - Geodynamic sketch of the Alps-Mediterranean system during the Late Oligocene (modified after Séranne, 1999). Red arrows indicate the main direction of shortening; pinkish areas represent zones under compressive regimes; volcanic areas associated with Apenninic subduction are indicated in violet, Event 8.

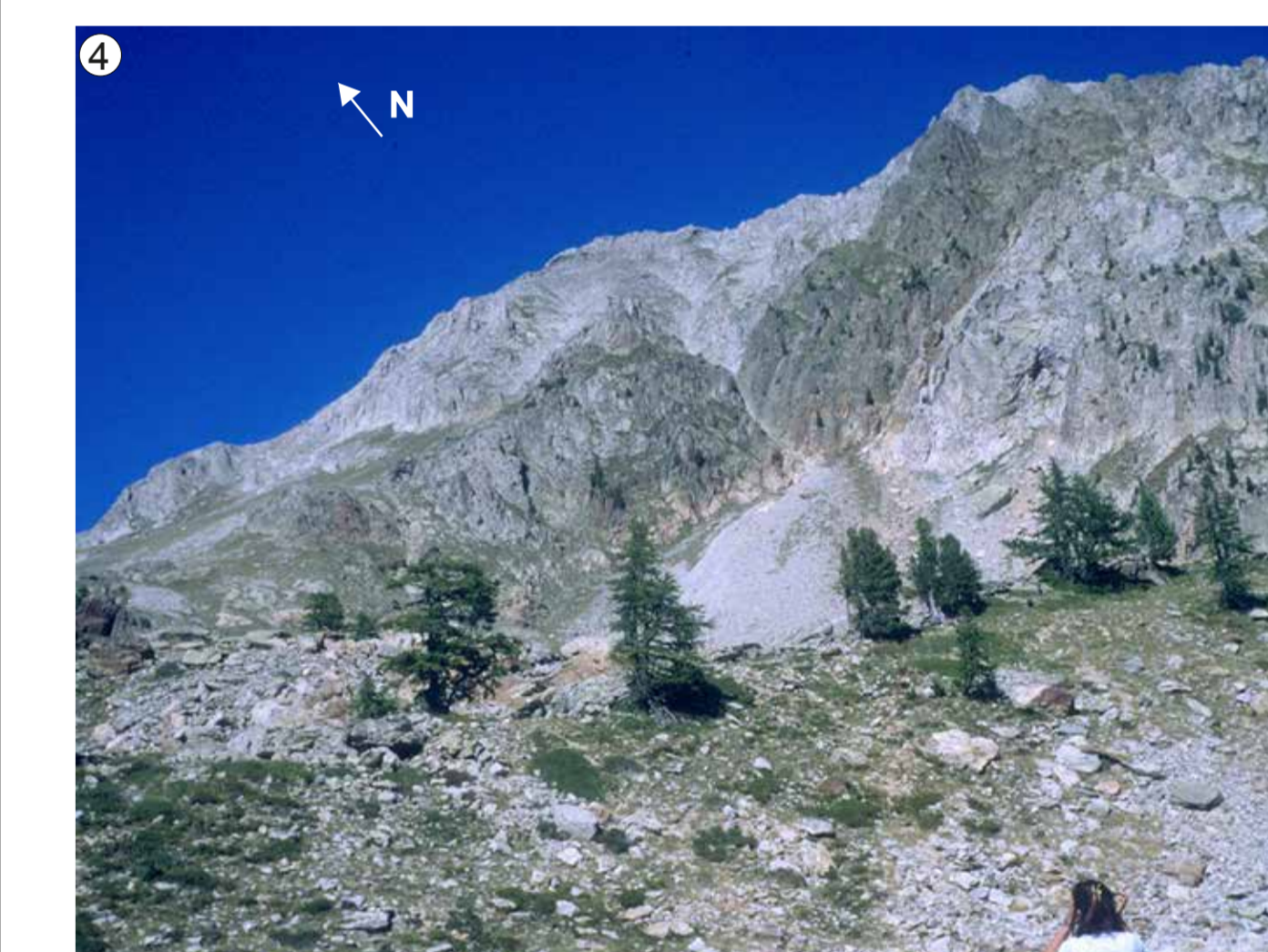


Fig. 4 - Thick semi-ductile fault zone deforming the Argentera-Mercantour Central Granite (white colour); the darker cataclastic-mylonite zone is cut by hydrothermal quartz and carbonates (beige colour at lower margin); blocks of deformed hydrothermal rocks occur on the south bank of Lac Nègre. Kinematic indicators show a top-to-the-south fault displacement. A student stands as a scale. Event 8.

Localisation of the area of interest (red polygon) within Europe and across national (France, Italy, and Monaco), regional, and provincial borders.

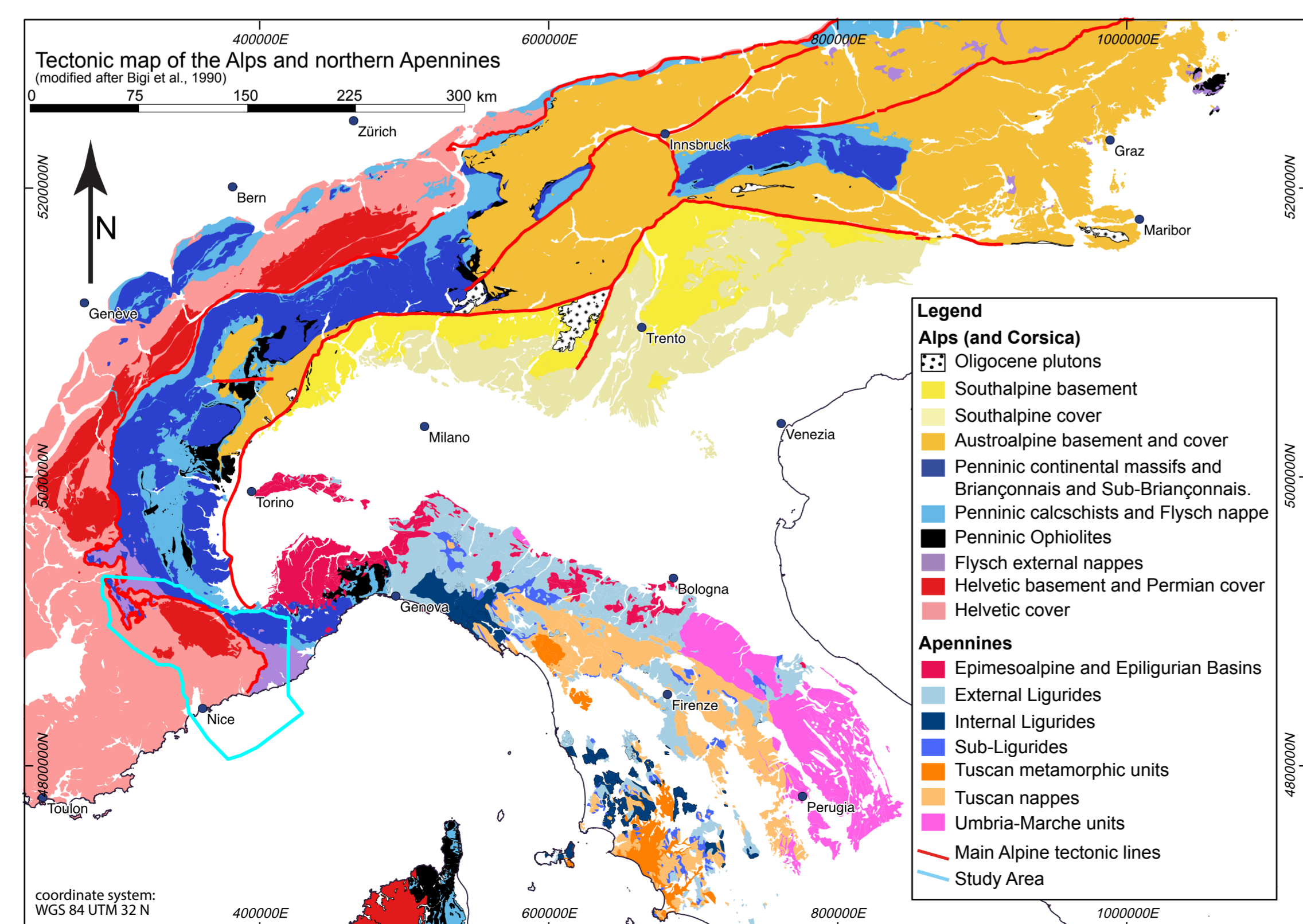
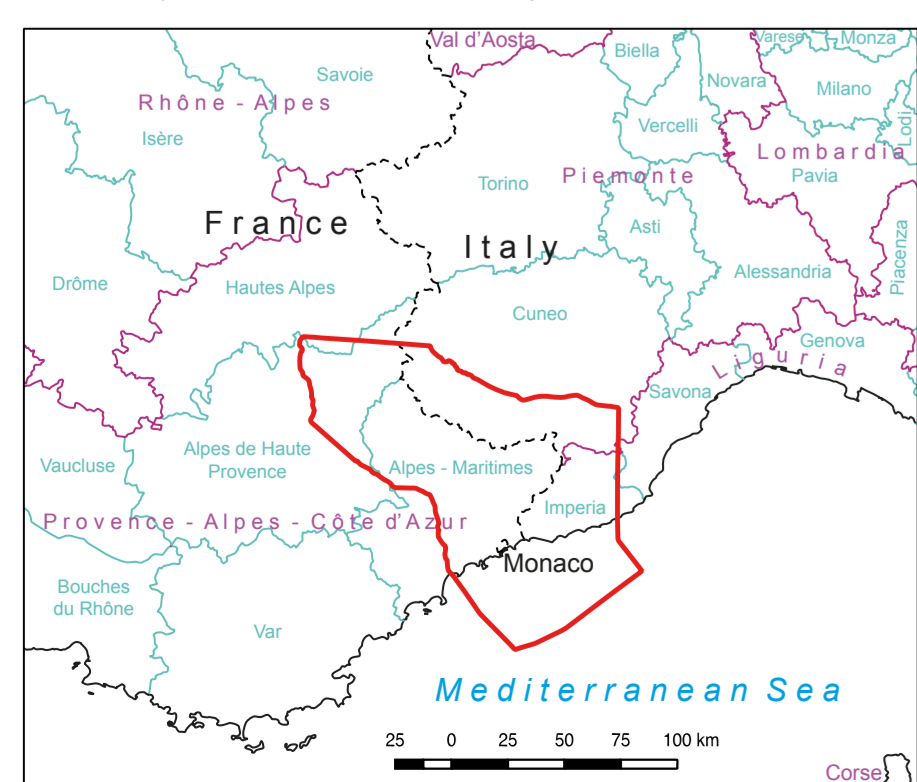
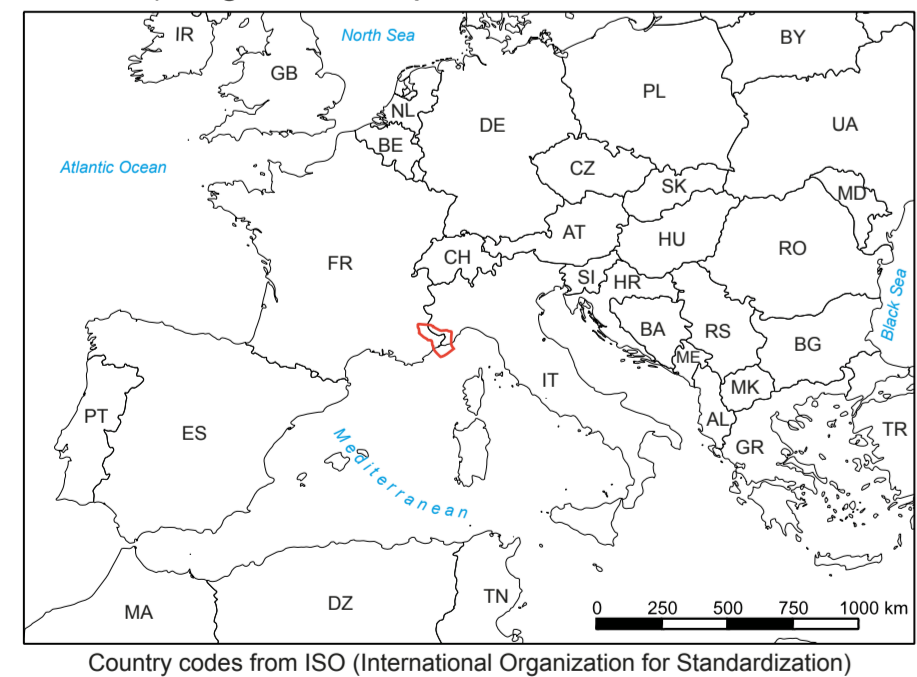


Fig. 1 - Volcanoclastic breccia of late Oligocene age with blocks of amphibole-bearing dacite, which is related to volcanic activity during the Apenninic cycle; Sentier Pointe des Douaniers of Cap d'Ail at the France - Monaco border. Event 8.

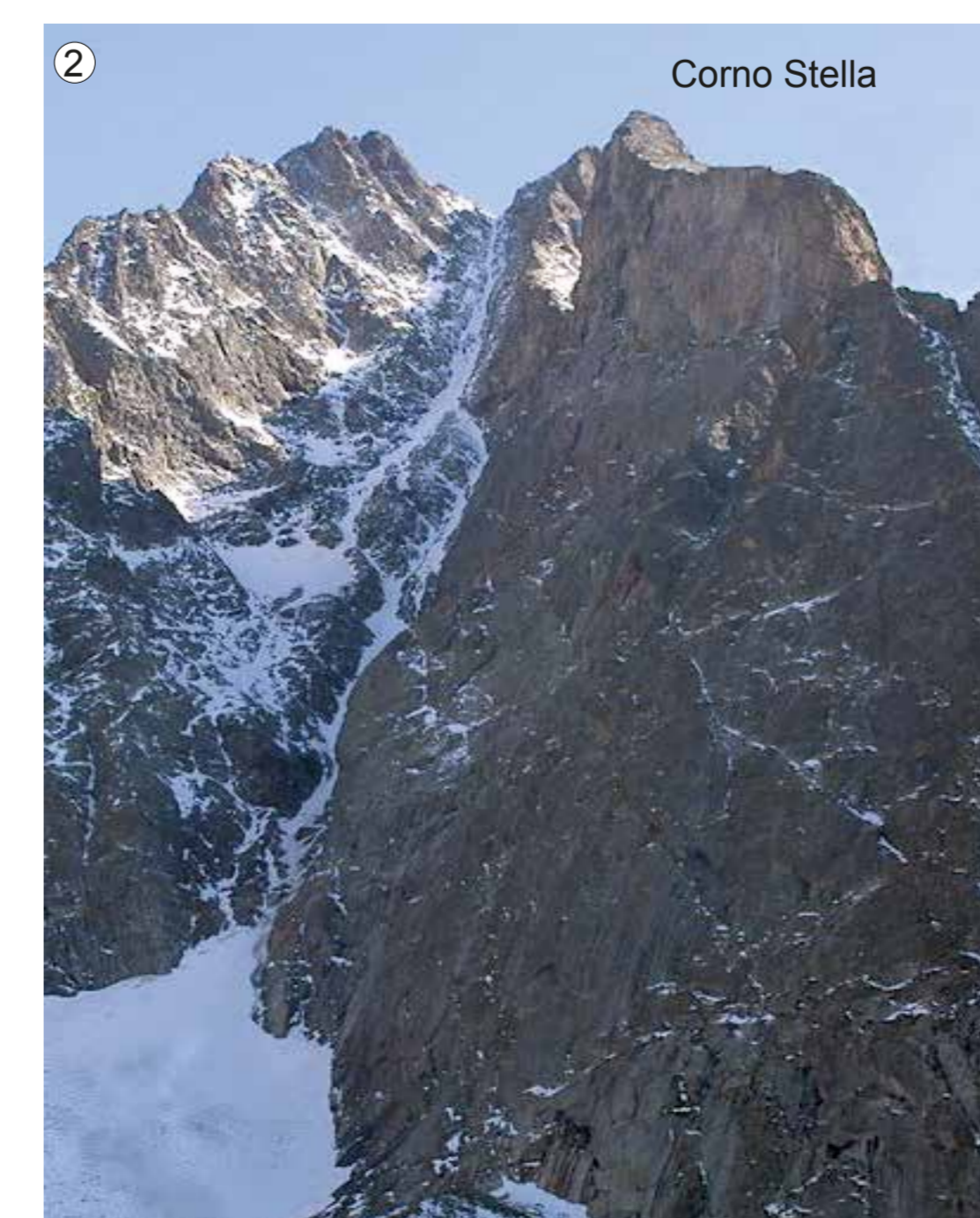


Fig. 2 - Semi-brittle tectonic structures within the mylonite zone hosting the huge dihedron of the Canalone di Lourasa couloir (Valle Gesso, Terme di Valdieri), an iconic site of the central Argentera-Mercantour Massif. The northern wall of Corno Stella (in full shade to the right) is a fault surface that was activated during the Apenninic cycle. The dihedron edge is divided into thick mega-septa that shape the majestic 800 m high wall. The lozenge shaped rock sector emerging from the slope half way up the couloir displays a regular set of fractures, marked by snow stripes. Their regular obliquity with respect to the main fault surface reproduces at the 100 m-scale the set of secondary fractures generated in W. Riedel's laboratory, performing analogic experiments of development of brittle faulting on semi-wet clay test-specimens (Riedel, 1929) (ph. Anonymous). Event 8.



Fig. 3 - Late Oligocene tectonic structures developed in the upper continental crust under a convergent lithospheric regime associated with the Apenninic subduction event. Top to the south thrusting of the migmatite block (ridge above the arrow) over the folded Triassic sediments, Aiguilles de Tortisse, near Col del Ferro (ph. credit to L. Levrier). Event 8.