Field trip 9

Remnants of hyper-extended rifted margins in the Alps: implications for the formation and reconstruction of Alpine type orogens

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During the 3 days of excursion we will visit remnants of the ancient Alpine Tethys margins preserved in the Tasna, Platta, Err, Bernina, and Ortler nappes in the Central Alps in SE-Switzerland and N-Italy. The field trip aims to make a transect across the fossil Adriatic rifted margin exposed in SE Switzerland. We will see classical fault bounded rift structures in thxe proximal margin and detachment systems with allochthons in the distal margins and the OCT. We will also see the complete stratigraphic record and the crustal and mantle rocks that formed the former deep-water rifted margins. These outcrops form the base for discussions on the tectonic and sedimentary evolution of present-day rifted margins. The field trip will illustrate the contrasting tectonic and sedimentary evolution of the proximal and distal margins and will provide the base for discussions about the processes related to crustal thinning and breakup processes at magma-poor rifted margins.

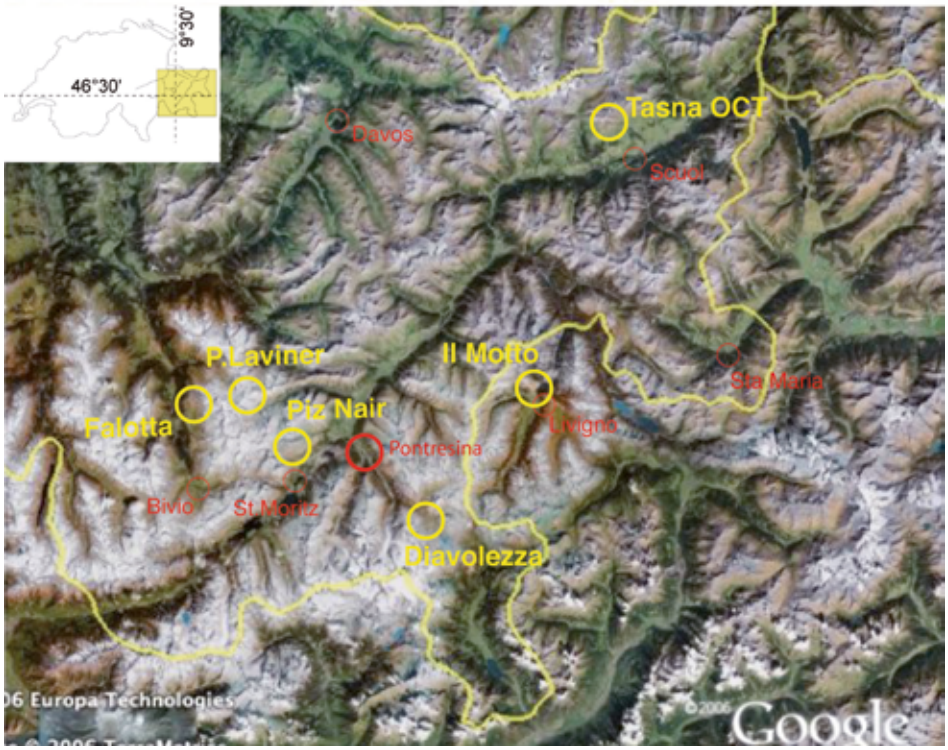

Fig. 1:
Location of the major sites exposing remnants of the former rifted margin.

Participation on the excursion is at the participants' own responsibility. The excursions involve walking in strenuous, but not dangerous terrain at high altitude (up to 3000 m above sea level). Adequate mountain gear is necessary (good trecking shoes, warm clothes, and some wet weather gear). If the weather conditions are bad the itinerary will be changed or alternative excursions will be organized. All field trips are amenable to everyone in a good state of health. The field guide was published by Manatschal et al. (2014).

References

Manatschal, G., Mohn, G., Masini, E. & Beltrando, M. (2014): A field guide across the margins of Alpine Tethys.- Journal of the Virtual Explorer, 48, doi: 10.3809/jvirtex.vol.2014.048

Mohn, G., Manatschal, G., Masini, E. & Müntener, O. (2011): Rift-related inheritance in orogens: a case study from the Austroalpine nappes in Central Alps (SE-Switzerland and N-Italy).- Int. J. Earth. Sci., 100 (5): 937-961.

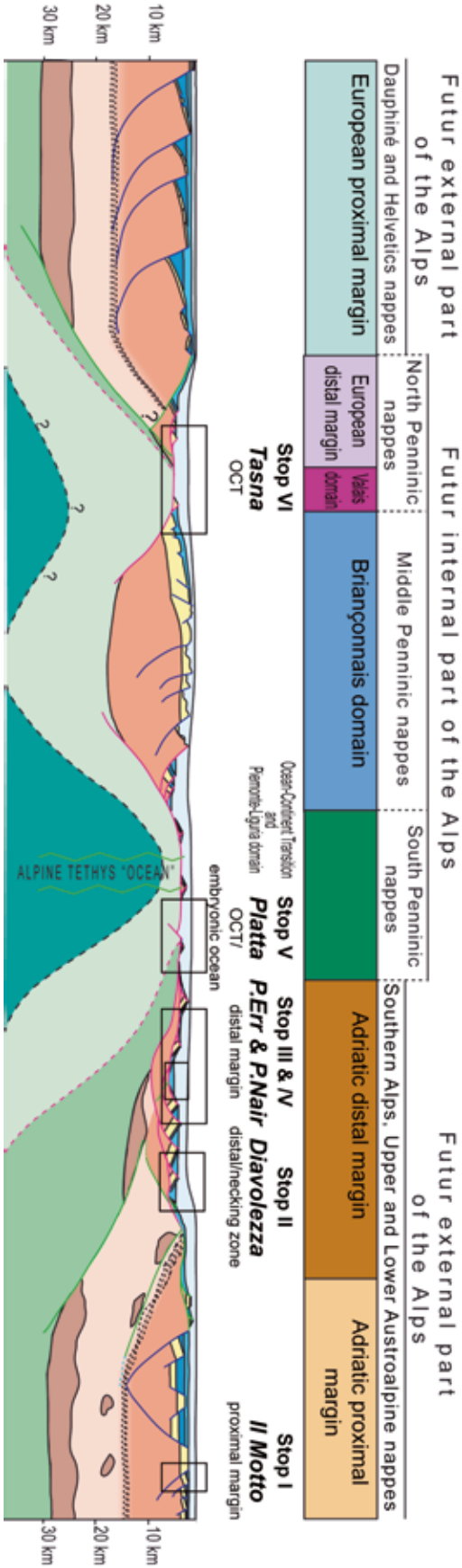

Fig. 2: Cross section across the fossil Alpine Tethys margins (modified from Mohn et al. 2011). The section shows the position of the different stops that will be visited on our excursion.

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Artikel/Article: Field trip 9 Remnants of hyper-extended rifted margins in the Alps: implications for the formation and reconstruction of Alpine type orogens 229-230