



Calabria: the Rosetta Stone in the reconstitution of the Alpine Tethys conjugate distal margins

Gianluca Frasca (1), Gianreto Manatschal (1), and Luca Barale (2)

(1) CNRS, EOST, Strasbourg, France, (2) CNR, IGG, Torino, Italy

While present-day proximal rifted margins are well documented in seismic and well data, the access to deep-water distal rifted margins and in particular to the rocks forming these domains remains difficult. Remnants of fossil rifted margins sampled in orogens are thus unique and enable to unravel the nature of rocks, structures and conditions controlling the formation of final rifting and lithospheric breakup. However, a major problem in orogens is that remnants of only one margin are preserved, while the conjugate has often been subducted and obliterated during convergence. Thus, our understanding of rift processes leading to lithospheric breakup is hampered by the lack of data and more precisely by the access to examples of well-preserved conjugate distal margins.

In the Alps in Western Europe, remnants of the fossil Jurassic distal Adriatic margin are spectacularly preserved and exposed in the Central Alps. However, remnants of the conjugate European margin, and in particular its distal parts are less investigated and most examples are heavily overprinted by Alpine deformation and metamorphism. In order to analyse the distal conjugate European margin in the Alps the remnants need to escape orogeny and subduction and have to be properly restored in the pre-orogenic position.

Here we aim at locating the European and Adriatic conjugate margins in the Mesozoic Alpine Tethys kinematic framework. The kinematic reconstruction, coupled with stratigraphic and basement data, allow to build a complete large-scale cross-section through the conjugate European and Adriatic rifted margins. Preliminary results are presented, in which we show that Calabria may represent the Rosetta Stone in the reconstruction of the distal Alpine Tethys margins.