



## Lower plate extension of a retreating subduction zone: case study of the Sicily Channel Rift Zone

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The Alpine-Mediterranean belt is remarkable because of the strong arcuation of its subduction front and the abundance of extensional basins developed within an overall compressional setting. Both resulted from rapid slab rollback and trench retreat especially in Neogene time, accompanied by upper-plate extension and the opening of the Western Mediterranean basins. The Strait of Sicily is a very interesting geological area in the Western-Central Mediterranean, as it has undergone tectonic extension and opening of a rift zone (Sicily Channel Rift Zone, SCRZ) on the lower plate (Africa) of the subduction zone, marked by the Gela Front and the Calabrian Accretionary Wedge, located south and south-east of Sicily, respectively. Furthermore, the SCRZ is important for understanding and quantifying the independent motion and counter-clockwise rotation of the Adriatic plate in Neogene time (Le Breton et al. 2017). However, the exact timing, tectonic style and amount of deformation along the SCRZ remain unclear.

To tackle these questions, we re-evaluate multichannel seismic reflection profiles across the SCRZ (CROP seismic lines M24 and M25), as well as a series of seismic lines correlated with boreholes data from the VIDEPI project ([www.videpi.com](http://www.videpi.com)). Main stratigraphic horizons and tectonic structures are mapped in a 3D database using the MOVE Software (provided by Petex). Preliminary results indicate ~30 km of NE-SW extension through the Pantelleria Rift and onset of syn-rift deposition during the upper Messinian, which could be related with the fast slab retreat of the Calabrian Arc.

### References:

Le Breton E., M.R. Handy, G. Molli and K. Ustaszewski (2017). Post-20 Ma motion of the Adriatic plate – new constrains from surrounding orogens and implications for crust-mantle decoupling, Tectonics, doi:10.1002/2016TC004443