Extensive tectonics during the Tyrrenian back-arc basin formation synthesized in a new morpho-tectonic map

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A new tectonic map is presented focused upon the extensional style accompanying the formation of the Tyrrenian back-arc basin. Our basin-wide analysis synthesizes the interpretation of vintage multichannel and single channel seismic profiles integrated with modern seismic images and P-wave velocity models. Distribution of extensional faults, active since Middle Miocene, throughout the basin allowed us to define a faults arrangement in the northern / central Tyrrenian mainly related to in a pure shear which evolved a simple shear opening of continental margins. Extensional style variation throughout the back-arc basin, allow to explore the relationship between shallow deformation, represented by faults distribution throughout the basin, and crustal-scale processes, subduction of Ionian slab and exhumation.