Elaboration of active and passive seismic data along the CROP 04 line, Southern Apennines

Lucia Savastano (1) and Nicola Piana Agostinetti (2)

(1) University of Roma Tre, Department of Science, Italy (luc.savastano@stud.uniroma3.it), (2) University of Vienna, Department of Geodynamics and Sedimentology, Austria

The Southern Apennines collisional setting is characterized by deep structural complexities, which have been here investigated through the combination of different (active and passive) source seismic data. Several interpretations of the available seismic data and profiles have been already carried out in the last two decades in order to provide a consistent geological significance of the detected sub-structures: since these do not allow an univocal interpretation of the Apennine roots, strong disagreements exist among geologists about the tectonic style of the chain in that portion of the Italian peninsula. In this work, we have first combined five passive seismic datasets from the overall available literature; we have then projected them at relative depths on the active seismic profile (CROP 04) where our interpretation has finally been made. The general aim of the work is to shed light on the Southern Apennines structure at depths greater than 25 km where, through the adopted approach, an approximative shape of the lower crust and upper mantle structure can be delineated.