



The Sardinian lithosphere: Insight into the geodynamics of the western Mediterranean

Mark van der Meijde (1), Fabio Cammarano (2), and Islam Fadel (1)

(1) University of Twente (ITC), Department for Earth Systems Analysis, Enschede, Netherlands (m.vandermeijde@utwente.nl), (2) University Roma Tre, Department of Science - Geological Sciences Largo San Leonardo Murialdo 1, 00146 - Rome

The 3D crustal and upper mantle structure of Sardinia and surroundings is a major gap in our knowledge about the tectonic evolution of the western Mediterranean Sea. Many seismic stations surround this region but the crust and upper mantle of Sardinia itself remain elusive. We will present a new lithospheric model based on data from the UT-LISARD network and permanent broadband seismic stations in Sardinia.

Crustal thickness is based on receiver function analysis. Dispersion curves of surface waves between stations are estimated by ambient noise analysis and teleseismic earthquakes. Combined with geological information, we will present the first interpretation of crust and upper mantle structure and potential for contribution to the geodynamical model of the western Mediterranean.

The first results show new features indicating significant crustal thickness variations underneath Sardinia, underlain by strongly varying seismic velocities in the upper mantle.