

1Lithospheric structures of the Southeastern Sardinia block inferred by the RF 2analysis

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8Abstract

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11 The island of Sardinia is often considered not worth of large interest, due to
12rather homogeneous Variscan-type continental crust, lacking of spectacular young
13tectonic features. Instead, due to its position in the center of the Mediterranean, it
14represents a key for understanding the geodynamics of the region.

15We present our seismological experiment, consisting on the deployment of a
16temporary network in the Southwestern part of the island, running from November
172014 to September 2015. The experiment is developed in the framework of a project
18of a seismic baseline determination, in an area characterized by a low instrumental
19and historical seismicity. We make use of about 600 teleseismic events with $M_w \geq$
205.5 in order to create a receiver functions (RF) data-set, aiming to delineate the deep
21structures and seismic anisotropy of the Sardinia block lithosphere. In particular, we
22highlight the strong back-azimuthal dependence of RF on the 3D characteristics of
23the sampled media that represent the imprint given by past deformation, and connect
24it with the intense magmatic processes occurred during late Eocene - Quaternary age.

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