



Mantle structure in the Tyrrhenian basin and surrounding areas from teleseismic P and S receiver functions

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In the Tyrrhenian basin and surrounding areas there are several interesting processes: subduction (active and possibly extinct), widespread volcanism, and extension with production of oceanic crust. These processes are associated to large variations of geophysical quantities, in particular: areas with very high heat flow and high variability of the crustal and lithospheric thickness. Most studies based on the receiver function (RF) technique for this area have been focused particularly on the crust and the lithosphere. We extend the study to the upper mantle discontinuities in this region using the P and S RF techniques. The RF are calculated on waveforms coming from selected stations that have recorded a large number of good quality signals from teleseismic distances. The broadband stations are located around the Tyrrhenian basin. We show some interesting signals that reflect the complexity of this area and some models for the uppermost mantle derived from simultaneous inversion of P and S RF.