



## **The Lithospheric and Upper Mantle Structure Beneath The Western Turkey Obtained From Receiver Function Profile**

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A broad-scale seismological experiment, SIMBAAD (Seismic Imaging Beneath the Aegean-Anatolia Domain), was performed in the Aegean-Anatolia region. The objective of the project is to investigate the crustal and mantle structure beneath Western Turkey, the Aegean Sea, and continental Greece. This tectonically very active region has experienced a variety of geodynamic processes and its geology and kinematics have been extensively studied. It is thus a good place to test competing hypotheses on how the surface kinematics is related to mantle structure and dynamics.

In the spring of 2007, we installed a temporary network of 33 broadband stations in Turkey, Greece, and S-Bulgaria for 2- year duration. It complemented the permanent broadband networks (~90 stations) with an inter-station spacing of ~100 km in the region. The experiment also included 2 north-south profiles of more densely-spaced stations (~15 km) crossing Western Anatolia at 18°E and 31.5°E.

We performed receiver function analysis on the western transect of 450km in length including 27 stations. Over 60 teleseisms (30° to 95° distance) were used in the analysis and more than 1600 receiver functions were selected. We determined  $V_p/V_s$  ratios using H-k stacking method and applied common conversion point stacking to receiver functions of the N-S linear array. The results indicate an average Moho depth of 30 km with negligible variations under the major grabens and core complexes (e.g. Menderes massif). We observe a good continuity on the Moho reflectivity for the most of the profile. The continuity breaks down at the northern and southern edges of the profile. We observe the African lithosphere at a depth of ~60km on the southern edge of the profile.