# Imaging the Lishosphere-Asthenosphere Boundary Structure of the Central Anatolian Plateau: Preliminary Results

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To obtain an image of the deep structure of the Central Anatolian plateau, we have inverted P and S receiver functions jointly for almost 8 broad-band seismograph stations. The inversion is performed using a simulated annealing technique to image the structure in terms of seismic velocity discontinuities, including Moho and the lithosphere-asthenosphere boundary beneath the region. This technique provide estimates of the absolute P and S velocities and of the Vp/Vs ratio up to a depth of $\sim$300 km. The crust with a thickness close to 35 km is underlain by the mantle lid with the bottom (LAB) at a depth around 60 km. P and S velocities in the lid are not more than 7.5 km/s and 4.5 km/s, respectively, and their ratio is close to 1.7 or 6% less than in standard models (IASP91, PREM). This low ratio is indicative of rocks with a high percentage of orthopyroxene. Below the lid, the S velocity is 4.0 – 4.1 km/s, whilst the Vp/Vs ratio is close to the standard value (1.8). A sharp transition from the lid to the LVL is indicative of a change in composition and partial melting. P410s phase (converted from P to S at the global 410-km discontinuity) cannot be detected in P receiver functions at most stations, although the Ps phase from the 660-km discontinuity is well recorded. The 410-km discontinuity is related with the olivine-spinel phase transformation, and the reason for its disappearance may lie in a low percentage of olivine and a high percentage of eclogite. This anomaly can be related with a large volume of oceanic crust which was subducted during the closure of the Tethys. This research is supported by Joint Research Project of the Scientific and Research Council of Turkey (TUBİTAK-Grant number 111Y190) and the Russian Federation for Basic Research (RFBR).