



Thickness of the lithosphere beneath Anatolia from S receiver functions

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We analyze S-receiver functions to investigate the variation of lithospheric thickness below the entire region of Anatolia. The teleseismic data used here have been compiled combining all permanent seismic stations which are open to public access. We obtained almost 12,000 S-receiver function traces characterizing the seismic discontinuities between the Moho and the discontinuity at 410 km depth. We obtained well-constrained images of the Moho (although with lower resolution than in P-receiver functions) and of the lithosphere-asthenosphere boundary (LAB). Results from previous studies suggesting shallow LAB depths between 80 and 100 km are confirmed in the entire region outside the subduction zones. We did not observe any drastic change in Moho and LAB depths across the North and East Anatolian Faults. To the east of Cyprus, we see indications of the Arabian LAB. The African plate is observed down to about 150 km depth subducting to the north and east between the Aegean and Cyprus with a tear at Cyprus. We also observed the discontinuity at 410 km depth and a negative discontinuity above the 410, which indicates a zone with partial melt above this discontinuity.