Crustal structures of the Anatolian Plate from receiver function analysis

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The crustal structure of the Anatolian plateau in Turkey is investigated using receiver functions obtained from the teleseismic recordings of the Kandilli Observatory array (KOERI; KO) and the available IRIS data (e.g., Eastern Turkey Seismic Experiment (ETSE), Northern Anatolian Fault experiment (YL), Continental Dynamics–Central Anatolian Tectonics (CD-CAT) project). The following steps are included for studying the crustal structures in Anatolia Plate: 1) high-resolution crustal structures inferred from Receiver Function (RF) inversion algorithm using multiple-taper correlation (MTC) estimates, we try to distinguish interfaces including Moho, bottom of partial melting and other interfaces by the Ps phase; 2) we calculate RFs by Time Domain Interactive Deconvolution and transform the time domain RFs into the H-Vp/Vs (H-k) domain to find the best fit Moho and Vp/Vs, we classify the quality of the H-k stacking results and record all the possible H-k couples; 3) we determine the H-k values for the stations with low quality by comparing the RF H-k stacking results with nearby stations with good quality. With the dense stations, we present high-quality Moho variations and crustal structures in the Anatolia Plate.