

Estimation of the Crustal Structure beneath the Broadband Seismic Network in the Eskisehir Region, Turkey, by Using Receiver Function Method

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Receiver function imaging is an important tool for the investigation of the crust and upper mantle structure. The P to S conversion (Ps) from the Moho is typically one of the most prominent phase on the P-wave receiver functions. The time delay between the Ps converted phase and direct P wave is sensitive to the depth of the velocity discontinuities, and the average S wave velocity above it. Estimates of the depth and thickness of the Moho and V_p/V_s ratio of the crust are important goals of many receiver function investigations. In the frame of the Turkey-Japan joint project, we attempt to determine S-wave velocity structure of the crust beneath Eskisehir Region, described by various tectonic settings. The teleseismic events are recorded by broadband three-component seismic stations of ANA-NET Seismic Network, which is operated by the Eskisehir Anadolu University since 2010. The seismograms from these events, whose epicenters lay at distances greater than 30° , were deconvolved in the time domain to remove the unwanted noise and then stacked to obtain better receiver functions. This information will be used to establish a linear relationship between thickness and V_p/V_s ratio, each of which is stacked for a given station to identify a best-fit estimate for depth to the Moho and V_p/V_s ratio. To determine their accuracy, these results will be compared with other geophysical studies performed in the region, 1-D crustal models will be presented at the conference. This study is supported by the Joint Research Project under the Bilateral Program of the Japan Society for the Promotion of Science (JSPS) and The Scientific and Technological Research Council of Turkey (TUBITAK) under Grant TUBITAK 116Y524.

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