



1-D crustal structure in western and southwestern Turkey using surface wave dispersion

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Anatolian plate is widely deformed by various forms of tectonic motions resulting from the collision of northward moving African-Arabian plates with stable Eurasia. Western Turkey is dominated by multidirectional extensional structures. We use a single-station, ray-theoretical approximation to analyse Rayleigh and Love surface wave recordings of 32 regional earthquakes recorded at GEOFON station ISP (Isparta, Turkey) within the epicentral distance range \sim 234-403 km. Fundamental mode group velocities are extracted from the raw waveforms using advanced digital filtering techniques of multiple filtering, phase-matched filtering, and time-variable filtering. The observations allowed the measurement of group velocities having periods occasionally as long as 35 s. The surface wave observations showed group velocities that were separable into three groups (i.e. north, west, southwest) according to their azimuths and group velocity characteristics. Average group velocities and standard deviations were calculated for each group. The observed group velocities of Rayleigh and Love surface waves are simultaneously inverted to interpret the 1-D crust velocity structure. Inversion results in study area show that average crustal thickness varies from 25-30 km with shear velocities of \sim 3.6 and 4.1 km s⁻¹. Later, we will combine the estimated surface wave informations with teleseismic receiver functions. This research is supported by The Scientific & Technological Research Council of Turkey (TUBITAK).