



Pn travel time tomography of Turkey and surrounding regions

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Recent improvements on the number and the quality of seismic stations in Turkey and surrounding regions provided a greater potential to obtain finer details of the upper mantle structure. A database was constructed from the earthquakes occurred between 1999 – 2009 and recorded at more than 800 stations. More than 42,000 phase picks from 600 earthquakes were revised and the earthquakes were relocated. We determined Pn velocity distribution from travel time observations between 160-2500 km ranges. The ray coverage was sufficient to accurately determine Pn velocity distribution for the majority of Turkey. Poor ray coverage was observed in the Mediterranean and Black Sea and Arabian Platform. Pn velocities are lowest in the eastern Turkey (7.6 km s⁻¹) and highest in the eastern Mediterranean and Bitlis suture zone (8.3 km s⁻¹). An anomalous low velocity zone is observed in the central Turkey. Pn anisotropy and the station delays were also computed and interpreted in relation to the active tectonics and crustal structure of the region.