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Crustal Structure Estimation of Northwestern Aegean Region by Waveform Simulation

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The African - Arabian continental movement with interaction Anatolian block relative to Eurasian is the most important phenomenon for the kinematic nature of the Aegean region. Under the complex collisional, extensional and strike-slip deformation pattern is one of the key element associated with faulting mechanisms and better location of earthquakes. Velocity and roughly depth structure has been investigated by using synthetic seismogram simulation. The events with magnitude larger than 4.5 used in the study covers an area between latitude 38°-42° N and longitude 24°-29° E containing more than 10 events for the period 2002-2007. Short period and broadband data for selected events were used available from the Kandillli Observatory and Earthquake Research Institute, National Earthquake Monitoring Center (KOERI-NEMC). The model satisfaction has been tested by correlation coefficient associated with the best fit between the calculated and event-recorded data. The results may be summarized as; Pn velocity changes in the range of 7.85 - 8.10 km/sec, and average crustal velocity is changing from 4.6 km/sec to 5.9 km/sec. The total thickness of the crust is approximately 29 - 32 km. relatively low Pn velocities are account for the high heat flow and similar low velocities that are common beneath extensional zones with high heat driving units.