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**A NEW INSIGHT INTO THE CRUSTAL STRUCTURE OF THE CENTRAL ANATOLIA TO EASTERN MEDITERRANEAN FROM A WIDE ANGLE SEISMIC DATA**

**Abstract**

As a part of the CyprusArc project a seismic wide angle reflection/refraction profiles, the 300 km and 45 km long north-south trending profiles extended from Cihanbeyli in Central Anatolia to Anamur in eastern Mediterranean and in southern Cyprus, respectively, in March 2010. The seismic experiment was comprised of two land explosions of 1125 kg explosives onshore and 98 cubic liters airguns offshore. 76 three-component and 119 vertical-component sensors were deployed along ~300 km distances between Cihanbeyli and Anamur with an average spacing of 1.25 km. 25 three-component sensors and 25 vertical component sensors were installed along 45 km distances on land at southern Cyprus with an average spacing of 1.25 km. Appropriate band pass filter was applied for each controlled sources to pick the arrival times. Modelling of the CyprusArc profiles data show that a Moho depth of 38 km at the northern end of the profile which increases 45 km through the southern end of the profile from central Anatolia to eastern Mediterranean. An average P-wave velocity is 6.5 km/s beneath Tuz Golu basin till approximately 23 km depth. P-wave velocity of some rock materials which brought into the open by Taurus Mountains is 5.5 – 5.6 km/s till 5 km thickness. A high velocity block (average P-wave velocity is 6 km/s) between 120 -150 km offset, till 8 km thickness probably correspond to ophiolite complex belong to Troodos. 2-D crustal P-wave velocity model shows crustal thinning between south Turkey and Cyprus from 45 km to 30 km. Final 2-D P-wave velocity models were further refined by generating synthetic seismograms to observe the theoretical travel times and amplitudes of the various arrivals. Additionally, 2-D gravity modelling was done to check robustness of the unresolved part of models by seismic phases and the all results were correlated with geology, tectonics and previous investigations in the study area.

**Conferences**

1. **Alper Denli**, Cemil Gurbuz, James Mechie and Michael Weber, Preliminary Results of 2-D Modelling Studies From Cyprus Arc Project Explosion Seismic Data, EGU General Assembly 2013, held 7-12 April, 2013 in Vienna, Austria, id. EGU2013-188
2. **Alper Denli**, Cemil Gurbuz, James Mechie and Michael Weber, Crustal Structure of the Central Anatolia – Eastern Mediterranean, Turkey and Cyprus from Wide-Angle Seismic Data, EGU General Assembly 2016, held 17-22 April, 2016 in Vienna, Austria, id. EGU2016-392

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