

A THREE-DIMENSIONAL CRUSTAL VELOCITY MODEL OF THE JAVAKHETI HIGHLAND FROM LOCAL EARTHQUAKE TOMOGRAPHY

The objectives of this study are to determine P and S wave velocity model in the crust and to characterize seismic wave propagation in the Javakheti Highland and surrounding areas, including north-western part of Armenia. The 3D crustal velocity model is constructed using the local seismic events recorded by seismic stations from newly established Armenian network. Above mentioned stations are installed due to the cooperation between the Institute of Geological Sciences (IGS) of NAS RA and the Institute of Earth Sciences, Academia Sinica and cooperation between the IGS and the Department of energy of the USA. The broadband and near broadband (Guralp-6TD, 3T, STS2) seismometers are installed in the seismic stations. Additional information from the surrounding stations was also extracted from the database of IRIS (Washington, <http://ds.iris.edu/ds/>). In the past several years the number of high quality seismic stations has increased because of new and expanded networks in Armenia and Georgia. This provides high-quality P and S wave travel-time data. The upgraded 3-D velocity structure from this study will significantly improve event location accuracy in the region. Tomographic results show a velocity structure up to Moho depth and evidence of anomaly zones in the territory of the study area.

Primary author: SAHAKYAN, Elya (Institute of Geological Sciences (IGS), National Academy of Sciences of Armenia (NAS of RA))

Presenter: SAHAKYAN, Elya (Institute of Geological Sciences (IGS), National Academy of Sciences of Armenia (NAS of RA))

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