

Seismic Velocity Models and Their Improvement

For the routine procedure to determine the hypocenter of recorded seismic events, explosion and nuclear events, specified crustal 1D seismic velocity models (used in Albania) have been derived and improved over the years. These used 1D velocity models are derived in 1986 (Kociaj S), 1992 (Peci et al), 2001 (Muco et al) years and the new model was developed in 2011 (Ormeni Rr). Comparing of relocate recent seismic events derived by different velocity models, we see that RMS values and location accurate are better to the new 1D velocity model (Ormeni Rr, 2011). The differences between the calculated epicenter of explosion by new model and the real explosion coordinates are very small compared to the explosion epicenter derived by other models. In this context we defined a reference velocity model was designed for Albania to better constrain the hypocentral determination. These high precision hypocenter locations are also required as initial values in 3D local earthquake tomography. Based on 1D velocity models of 2011 was developed 3D P-wave velocity model of Albania (Ormeni Rr, 2013). The interpretation of the 1D and 3D velocity models infers interesting features of the deep structure of Albania.

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