

Abstract

For the routine determination of the hypocenters of recorded seismic events, including explosions and nuclear events, specific crustal 1D seismic velocity models (used in Albania) have been derived and improved over the years. These used 1D velocity models were derived in 1986 (Kociaj S), in 1992 (Peci et al), and in 2001 (Muco et al). A new model was developed in 2011 (Ormeni Rr). Comparison of relocations of recent seismic events derived by different velocity models, shows that RMS values and location accuracies are better for the new 1D velocity model (Ormeni Rr, 2011). The differences between the calculated epicenter of explosions using the 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 designed for Albania to better constrain the hypocentral determination. These high precision hypocenter locations are also require as initial values in 3D the local earthquake tomography. Based on 1D velocity models of 2011, a 3D P-wave velocity model of Albania was developed (Ormeni Rr, 2013). Interpretation of the 1D and 3D velocity models infers interesting features of the deep structure of Albania.