



Lateral Velocity Contrasts across Shkodra-Peje Deep Fault Zone of Albania

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Abstract: The Shkodra-Peje transversal fault zone is the potential transversal seismogenic belt in Albania and nearby. 1D-velocity models of seismogenic zones crosses by Shkodra-Peje deep transversal fault are computed at VELEST software of system SEISAN. The re-picked data yield resolved P-wave and S-wave velocity results and proved to be more suited than bulletin data for detailed tomographic studies. Although earthquake hypocenters from the ASN bulletin have location errors which are negligible for civil protection purposes and large scale seismotectonic analyses, more accurate hypocentral determinations are necessary for detailed seismotectonic and geodynamic studies. The interpretation of the obtained 1D velocity models allows us to infer re-picked P-wave and S-wave arrival time recorded in period of time 2002-2011 by the Albanian, Montenegro, Thessalonica and Macedonia seismic networks. We defined lateral velocity differences in zones across the Shkodra-Peje deep fault for better constrain the hypocentral determination, in particular the hypocentral depths and for more detailed seismotectonic analyses. It was noted that the two seismogenic zones divided by the Shkodra-Peje transversal fault that the smoothness of the velocity variation increased with depth. The interpretation of the obtained 1D velocity models and lateral velocity differences across Shkodra-Peje deep fault zones allows us to infer interesting features on the deep structure of this area. These results represent an important step towards more detailed geodynamic and seismotectonic analyses.

Key words: *1D velocity model, earthquake location, layers, seismotectonic-zones*

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