



Anisotropy of attenuation of high-frequency body waves in the External Dinarides

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The Dinarides are a part of the complex Alpine–Carpathian–Dinaric orogenic system. They formed as a result of the push of the African plate and a collision of the Adriatic microplate with the European plate. The External Dinarides represent western part of the Dinarides derived from the Adriatic microplate, i.e. the Adriatic carbonate platform. They are characterised by NW trend and SW vergence of compressional and imbricated structures. Recent seismicity in the area varies from moderate to high with rare occurrence of strong earthquakes. Prevailing compressional stresses result in mainly reverse faulting, with or without a dextral strike-slip component. This area represents one of the geologically and tectonically most complicated and puzzling regions in Europe.

We used local earthquakes recorded at broadband seismic stations of the Croatian seismological network to analyse attenuation of high-frequency body waves. To estimate attenuation of P- and S-waves, i.e. the quality factors Q_P and Q_S , we applied the extended coda normalization method. These quality factors reflect the total attenuation of the direct body waves in the crust. The results indicate strong attenuation of P- and S- waves. Moreover, further analysis of the Q-factors indicates existence of anisotropy in seismic attenuation, with higher attenuation in the direction perpendicular to the strike of the Dinarides and lower attenuation parallel to it.