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# Attenuation of high-frequency body waves and its anisotropy in the External Dinarides

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The Dinarides are situated in the broad Africa-Eurasia convergent plate boundary zone and are a part of the complex Alpine–Carpathian–Dinaric orogenic system. Due to the push of the African plate, the Adriatic microplate collides with the European plate in the north (the Alps), which has resulted in the formation of the Dinarides to the northeast. The main deformational phase for the Dinarides was Paleogene N–S shortening and dextral lateral compensation. This resulted in characteristic NW trend and SW vergence of compressional and imbricated structures. Because of its complexity, the area is considered as one of the geologically and tectonically most complicated and puzzling regions in Europe. Recent seismicity in the area varies from moderate to high. Prevailing compressional stresses result in mainly reverse faulting, with or without a dextral strike-slip component.

In order to estimate attenuation characteristics of the External Dinarides, we used local earthquakes recorded at seismological BB-stations of the Croatian seismological network. We focused on the 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 mostly in the upper crust. The Multiple Lapse Time Windows Analysis (MLTWA) method was applied in order to quantify the intrinsic attenuation ($Q_i^{-1}$) and the scattering attenuation ($Q_{sc}^{-1}$).

The results obtained by the coda normalization method indicate strong attenuation of direct body waves. P-waves are on the average attenuated more than S-waves. Further analysis of the $Q_p$- and $Q_S$-factors in the southern part indicates existence of anisotropy in seismic attenuation in the area, with higher attenuation in the direction perpendicular to the general trend of the structures. The results obtained by the MLTWA method suggests that the intrinsic attenuation is the dominant attenuation mechanism. The scattering attenuation is in general less than half the intrinsic attenuation.