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Source characteristics for Vrancea (Romania) intermediate-depth earthquakes

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Time-domain (P pulse shape) and frequency-domain (high-frequency spectral decay and spectral ratios) characteristics of the waveforms model for a set of 150 small-to-large Vrancea earthquakes ($10^{12} < M_0 < 10^{21}$ Nm) are investigated. All the available data (accelerations, short-period and broad-band velocities) are considered. A large amount of new and high-quality earthquakes data has been recently obtained due to the impetuous development of the seismic network on the Romanian territory. Thus, multiple recordings have been collected within the cooperation programme with the University of Karlsruhe (Germany): Collaborative Research Centre 461 programme (Bonjer et al., 2000) and temporary experiments, such as tomography experiment CALIXTO'99 (Wenzel et al., 1999) and urban seismology experiment URS (Ritter et al., 2005). To investigate source and site effects we combine forward modelling with relative techniques of signal analysis, like EGF technique or spectral ratio technique. Significant azimuthal variation in seismic wave attenuation is emphasized as well. The implication of the resulted source and path properties on Vrancea earthquakes scenarios, seismic hazard assessment and structural and tectonic modelling of the S-E Carpathians area are finally discussed.