



Mid-European Seismic Attenuation Anomaly

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Macroseismic studies for various historical earthquakes with epicenters in the East Alps region have shown a significant elongation of isoseists to the North-West direction. Such an anomalous attenuation of seismic waves in Central Europe is investigated on the base of instrumental records of two moderate-size earthquakes in Vienna Basin, which occurred in September and October 2013. It was found that for both earthquakes the peak amplitudes of both velocity and acceleration are considerably higher in the North-West direction compared to the other directions. The peak ground velocity amplitudes at comparable epicentral distances but different azimuths may differ even by one order of magnitude. The inspection of individual seismograms suggested that the phenomenon is associated to the propagation of S-waves. The significant differences in frequency contents of the seismic waves radiated to different azimuths are also documented. Maximum predominant frequency was not observed at stations closest to the epicenters but about 250 km away, in Bohemian Massif. The possible causes of all these observations are briefly discussed on the basis of elementary data analysis but further research and in-depth analysis is required to elucidate these phenomena.