Austrian empirical ground motion characterization models

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Austria is an area with moderate seismicity and a long return period of strong earthquakes. To calculate our local ShakeMaps (maps of ground motion and shaking intensity) we are looking for adapted Ground Motion Prediction Equations (GMPE) up to a magnitude unit 6. We have a good coverage of empirical data up to Mw of 4.5 but a scarcity of strong earthquakes data. Stronger events can be found outside of our investigation area up to a distance of 200 km.

We present derived models for the Peak Ground Accelerations (PGA), Peak Ground Velocity (PGV), Peak Ground Displacement (PGD), Arias Intensity and for Pseudo Spectral Accelerations of various frequencies.

Investigations about introducing additional complex parameters were conducted and comparisons with various models were made. Spatial patterns are observed over the GMPE residuals and will be discussed in the presentation.