Intensity Prediction Equation for Austria: Applications and analysis

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We present the results of the intensity prediction equation for Austria as a function of moment magnitude, focal depth and hypocentral distance from the source. This equation aims to be simple and correct to generate shakemaps in near-real-time for crisis management and risk assessment in terms of the impact of an earthquake. Before the model computation, the dataset was carefully selected from the Austrian Earthquake Catalogue (AEC). Then, the model was derived through two Ordinary Least Square Adjustments; the first one was used to calibrate the epicentral intensity, whereas the second one aimed to derive an intensity attenuation law. Additionally, first own-approach to remove local site effects was used to refine the model. In total, the used dataset includes 42 earthquakes befalling in Austria and border regions between 2004 and 2018. Their local magnitude varies between 3.0 and 5.4. In total, 3,214 IDPs with intensity values between III and VII-VIII (EMS-98) were used.

Applications and analysis of the model will be presented. Furthermore, first results to an Austrian hazard map based on intensities will be introduced.