



Effects of exposure model resolution on seismic risk estimates - Examples from the cities of Kerak and Madaba in Jordan

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Seismic risk is composed of the three components seismic hazard, exposed structures and the structures' vulnerability with respect to ground motion. Seismic risk estimates are subject to often large uncertainties, whose precise quantification remain a challenge. In general the largest uncertainties are considered to stem from the seismic hazard component, followed by the uncertainties in the vulnerability models. The importance of uncertainties in the exposure component are often regarded as of minor importance. This is obvious in the case the seismic risk assessment is carried out for a set of specific structures, but in case of risk estimates at city- or regional-scale the importance of uncertainties in the exposure model strongly increases. In this presentation exposure models derived from census data, remote sensing data and panoramic images obtained by a mobile mapping system for the two cities of Kerak and Madaba in Jordan and their uncertainties are discussed. Furthermore, the presentation aims to provide an insight on the effects of using these exposure models, derived from different data with varying resolution and different model assumptions on the uncertainties of seismic risk estimates for the two considered locations.