



Generating natural hazard risk maps for Styria to highlight differences in the social vulnerability

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Costs of natural hazards are commonly classified as either damage costs or risk mitigation costs. These categories are not independent, as risk mitigation aims at reducing damage costs. However, the factors that influence the risk of damage costs are still not completely understood. Commonly, the risk is defined as a function of hazard, exposure and vulnerability and we want to produce risk maps that combine existing information about these factors under a common framework. Because of good data availability, the risk maps will be produced for Styria, Austria, where detailed hazard and land-use maps are available on a municipality level and the costs can be verified with private damage data from the Austrian disaster fund. A key issue is the generation of a social vulnerability map by the use of demographic and socio-economic data. We use a statistical model to analyze how much of the variance in the damage data are explainable by considering social characteristics across municipalities. The combination of the aforementioned maps results in a risk map, which can not only display areas of high risks, but also the underlying reasons. Knowledge about risk increasing factors consequently allow for better suited risk mitigation measures. Especially soft measures need to be clearly targeted towards local needs to increase the resilience and adaptive capacity of municipalities.