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## The design of user-centred seismic risk maps – the Swiss case

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Maps are a widely used mean to communicate spatial hazard and risk information to the public, with the aim to increase individual risk awareness. The use of maps is triggered by scientific evidence that maps are the format most preferred by the public. However, past studies have shown that, if not well designed, maps are often misinterpreted and can trigger wrong attitudes. Thereby, the different elements such as the icons on the map, the chosen layers, the legend, or the used color scale influence the comprehension of the information on the map. In the context of natural hazards, and more precisely earthquakes, research has so far mainly focused on the design of hazard maps, and little is known about the effective design of risk maps. We thus assessed how to design understandable, useful, and actionable seismic risk maps for the public.

To this end, we conducted a transdisciplinary project in Switzerland by ensuring an interdisciplinary co-production of the map and testing it with the public. First, we – an interdisciplinary group at the Swiss Seismological Service at ETH Zurich – co-designed different versions of the seismic risk map varying the color scale and legend format. Second, we tested these versions with a public survey (between-subjects experiment); representative for the German- and French-speaking part of Switzerland. We assessed which map version was correctly interpreted, perceived as useful, increased people's risk perception, and triggered people to take protective actions. Further, we analyzed whether certain social groups (e.g., house owners) had different preferences, risk perception, or intentions to take action.

At the conference, we will present the preliminary results of the survey and provide evidence-based recommendations on how to design user-centred seismic risk maps. This should support institutions responsible for public communication to add seismic risk maps to their products to effectively inform the public about seismic risks and, in turn, increase their risk awareness and intention to take protective actions.

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