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COMPARING RISKS DUE TO STORMS, FLOODS AND EARTHQUAKES FOR THE CITY OF COLOGNE, GERMANY

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In the last decades, economic losses from natural disasters have been growing continuously all over the world. Governments, industries and the public recognize the need to identify and control risks due to natural hazards. Experiences with decision makers (e.g. disaster management agencies, urban planners, insurers, regional and local authorities) show that they need comprehensive information, which include all relevant hazard types within a region. Only if an urban planner is informed about and aware of the characteristics (frequency, intensity, spatial distribution, exposed population and values, expected losses etc.) of all relevant risks in his planning area, he is able to make adequate planning decisions.

Multi-risk assessments should provide reliable estimates on human and economic losses caused by (extreme) natural events. They will help to identify effective risk reduction strategies and they will raise public awareness and strengthen people's preparedness. However, methods for multi-risk assessments are at a rudimentary level.

This study demonstrates a first attempt of a multi-risk assessment for the city of Cologne, Germany, performed within the project "German Research Network Natural Disasters". The multi-risk assessment is based on probabilistic hazard assessments for storms, floods and earthquakes, an estimation of the city's assets, vulnerability studies and estimations of economic losses based on distinct scenarios. The three

different types of risks can be compared on the basis of risk curves that illustrate for each risk type the exceedence probability that a certain economic loss will occur.

The presentation will show needs for harmonization in order to receive a consistent multi-risk assessment as well as the chosen methodology and first results.