Geophysical Research Abstracts, Vol. 8, 09906, 2006
SRef-ID: 1607-7962/gra/EGU06-A-09906

National flood mapping in Austria - Combining regionalisation methods and local expert judgement

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The estimation uncertainty in regional flood analysis depends on two factors. First, which regionalisation approach is used to estimate floods and second on which data or information the estimation is based on. In scientific regionalisation studies the focus is mainly on the first. The objective is to minimize the overall estimation uncertainty. In operational flood regionalisation, data and information on regional flood behaviour is often available, but watershed managers are often limited to rather simple regionalisation approaches. To reduce the regional estimation uncertainty both factors have to be addressed. In the following, a national flood mapping project in Austria is presented, where flood values of over 10000 catchment have to be estimated. In this project, expert knowledge of the local water authorities were combined with complex regionalisation approaches to minimize the estimation uncertainty by a two step approach. First, flood estimations are proposed by one or a combination of several regionalisation approaches. In a second step the proposed values are manually modified based on expert judgement. It is shown that the incorporation of expert knowledge strongly improves the regionalisation results.