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Climate Change Impact on Floods in Austria. Focus on mechanisms

J.L. Salinas (1), A. Viglione (1), R. Merz (2), and G. Bloeschl (1)

(1) Vienna University of Technology, Institute of Hydraulic Engineering and Water Resources Management, Centre for Water Resource Systems, Vienna, Austria (salinas@hydro.tuwien.ac.at), (2) Helmholtz Centre for Environmental Research, Halle, Germany

Understanding climate effects on floods is essential for developing climate adaptation strategies. The traditional scenario method of climate impact studies is problematic due to the large uncertainties which are difficult to estimate. Moreover, it is rarely clear how the uncertainties in the assumptions propagate to the results. The focus of this work is on the mechanisms to allow a more transparent assessment of cause-effect than is possible by scenarios alone. This allows us to separate changes that are likely to ocurr (hard facts) from changes that are possible but not supported by data evidence (soft facts). For instance, we found that some mechanisms allow us to suggest likely changes of floods with some confidence, e.g. the increase of winter floods due to higher temperatures (rising snow fall line) and the decreasing summer floods due to earlier snowmelt. Other mechanisms, like future changes in convective precipitation, remain elusive.