



Uncertainty analysis of the modelling chain from GCM to flood inundation

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This study aims to set up novel techniques for tracking uncertainties through a modelling framework of extreme floods under a climate change scenario. The runoff models, in this case LISFLOOD-RR and HBV. The hydrological models provide modelled discharges which are fed through two different FP and HECRAS.

Uncertainties in climate impact modelling are many, for example input errors in observations, impact model parameter and structural uncertainties. The main research questions of this study are (1) how sensitive is the cascade setup to the downscaled meteorological input from the GCMs to extreme events; (2) how is the climate change signal affected by the downscaling technique; (3) how can we quantify the sources and magnitude of scale multi-source uncertainties whilst taking into account the limitations of our observed measurements; (5) how do we develop strategies to reduce uncertainty. The analysis is done in three steps. Firstly, a screening methodology is applied to all steps of the modelling chain to identify the main sources of uncertainty.