



The role of interactions along the flood process chain and implications for risk assessment

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Floods with their manifold characteristics are shaped by various processes along the flood process chain – from triggering meteorological extremes through catchment and river network process down to impacts on societies. In flood risk systems numerous interactions and feedbacks along the process chain may occur which finally shape spatio-temporal flood patterns and determine the ultimate risk. In this talk, we review some important interactions in the atmosphere-catchment, river-dike-floodplain and vulnerability compartments of the flood risk system. We highlight the importance of spatial interactions for flood hazard and risk assessment. For instance, the role of spatial rainfall structure or wave superposition in river networks is elucidated with selected case studies. In conclusion, we show the limits of current methods in assessment of large-scale flooding and outline the approach to more comprehensive risk assessment based on our regional flood risk model (RFM) for Germany.