

SEMINAR ANNOUNCEMENT

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FUTURE FLOOD RISKS IN MOUNTAIN AREAS: MODEL PROJECTIONS SHOW AN INTENSIFICATION OF EXTREMES IN TWO PILOT CATCHMENTS IN CHINA AND SWITZERLAND

In this talk I present a model chain to assess the climate change impacts on summer flood frequencies in mountainous catchments. The model chain is based on a stochastic weather generator and a semi-distributed hydrological model and has been applied to two mountainous catchments located in China and Switzerland. The results regarding the changes in the simulated past (1999-2018) and future (2021-2050) flood regimes are presented and discussed. Although a large ensemble of bias-corrected regional climate models (RCMs) and two emission scenarios have been considered, nearly all simulations indicate an intensification of flood extremes across all assessed return periods (10-100 years). The model chain has also been recently extended with a hydrodynamic model to identify the river depths and the associated flooded areas during extreme events of a given return period. It has thus been shown for the Chinese pilot catchment that additional built-up areas may be flooded regularly during future storm events. I argue that empirical data may not be sufficient to assess future flood risks in mountain areas.

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