



Assessment of Regional Climate Change and Water-Related Extremes by two-way coupling of climate and hydrological models

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The regional scale is where climate change impacts manifest. However, there is a clear lack in understanding of climate induced impacts at the regional scale, especially with respect to the generation of intense rain and flood events and the probability of exceedance of important thresholds (low flows, droughts). Also far from being well understood is the feedback hydrology-vegetation-climate at the regional scale. Scientific interest is triggered not only by the practical relevance of the topical area, but also by a high uncertainty in projections and the need to reduce uncertainty. Our basic idea to improve the understanding of landscape processes is to include necessary extensions in a regional climate model by cross pollination from an eco-hydrological model.

In the poster we will (i) first assess the actual performance of the regional climate model to reproduce the hydrological water balance and its flux components and thereby identify and quantify needs for an improved process description in the simulations, (ii) inter-compare the process formulations in both the regional climate and the hydrological model and (iii) finally present possibilities of how more sophisticated hydrological and vegetation modules could be added to the climate model.