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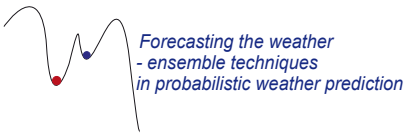

Assessing climate impacts with models of different resolutions

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When deriving climate information for impact studies, e.g., for the societal sector, the environment or ecological studies, the results of global climate models (GCM) are an indispensible basis. In order to bridge the scale gap between what the climate models offer and what the impact models require, downscaling has to be applied. Dynamical models (RCM) or empirical statistical downscaling methods (ESD) are forced by physical and structural information from the global model.

This presentation addresses the dependency of WETTREG, a statistical downscaling method, on the spatial scale of the forcing data (GCM or RCM). WETTREG relies on the ability of the forcing models to reflect a changing climate in the properties and frequencies of atmospheric patterns. The scale dependency will be investigated by using the patterns, as they are produced by (i) a GCM directly and (ii) a cascade of a GCM driving a regional climate model (RCM). Results from several GCMs and GCM-RCM-cascades which force WETTREG will be shown. This includes high-resolution information for a number of surface climate parameters as well as projections of their development according to climate scenarios.