



Spatial precision vs large scale uncertainties in climate change scenario

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In assessing climate change impacts on various weather dependent processes, weather series representing changed climate are required as an input to the impact models (for example crop growth models). In producing these series, the weather generator (WG) is often employed: WG parameters are derived from the observed series and then modified using the climate change scenario, which defines changes in the relevant climatic characteristics. These scenarios use to be derived either from GCM or RCM simulations. An advantage of using RCMs (with respect to using GCMs) consists in higher spatial resolution of simulated processes and thereby in higher spatial precision of RCM-based climate change scenario. On the other hand, advantage of using GCM-based scenarios consists in larger number of available GCM simulations, which allows to better account for the uncertainty in larger-scale patterns of climate change.

This contribution aims to contribute to the discussion on the usefulness of RCMs in developing the climate change scenarios. To show the significancy of high resolution RCM based spatial signal in changes in relevant climatic characteristics, this signal will be compared with the uncertainty in GCM-simulated larger scale patterns of change. The former RCM-based signal will be derived from the RCM simulations made for the PRUDENCE project, the latter GCM based uncertainty will be based on simulations from a larger number of GCMs. The results will be shown in terms of maps for a whole Europe.

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