



Deriving user-informed climate indices from climate model ensemble results

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In preparation for the next IPCC report, GCM simulations for the RCP-scenarios are conducted. The simulation results are downscaled to inform impact research and policy information. Downscaling activities are coordinated e.g. in the CORDEX framework. As part of the European CORDEX initiative (EURO-CORDEX) a German research project provides a number of simulations to this effort: the project ReKliEs-De (Regional Climate scenario ensemble for Germany). In this project, dynamical as well as statistical downscaling is used to provide high resolution climate change information for Germany and the major river catchments draining into Germany. The project was initiated by representatives of the federal states environmental administrations concerned with providing climate change, climate impact and climate adaptation information to the federal states governments. Thus, besides conducting the simulations, a focus of the project is on user-tailored output from the modeling exercise.

While climatologists are now well used to analyzing ensembles, not all impact researchers feel comfortable with them. When climate impact analyses for current and past climate is based on observational data, many impact researchers have developed impact assessment methods or models that rely on (perceivedly) correct, i.e. measured data. Many impact models are too complex, too refined or too compute-intensive to run several climate model ensemble members through and possibly cannot cope with biased data.

In the ReKliEs-De project a collaboration between regional climate modelers and impact researchers is attempted to narrow the gap between the climate model ensemble output and the impact model input. To this end a strong user collaboration is part of the project. However, narrowing the aforementioned gap is a two-way process. Impact researchers need to deeply tap their specific impact system knowledge to identify possible candidates for climate indices derived from ensemble climate model output that might be usable in their impact assessment.

The contribution will present a few ideas for user-oriented climate model output indices together with the challenges they pose for the impact researchers and possible solutions for those challenges.