

Towards an ensemble prediction system for decadal climate forecasts - first results on variation of initial conditions

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Within the framework of the German BMBF funded MiKlip programme the general goal of LACEPS (A Limited-Area Climate Ensemble Prediction System) is the development of an ensemble climate prediction system for decadal forecasts on the regional scale. Focusing on Europe the ensemble prediction system will be employed by using the regional climate model COSMO-CLM. The ensemble should cover the spectrum of all possible outcomes given by the uncertainties in the model itself and in its input data with the aim to ascertain the likelihood of each climate prediction.

The ensemble climate prediction system will be based on mainly three different perturbation strategies: perturbation of 1.) initial conditions, 2.) model physics, and 3.) boundary conditions. In the presentation results of the first mentioned perturbation strategy with respect to near-surface temperature and precipitation will be shown. The results of the regional climate model are strongly linked to the forecast of the driving global climate model with respect to the climatological mean as well as to the interannual variation of the 2 m air temperature.