



## **Ensemble simulations with the regional climate model REMO**

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Ensemble simulations are a useful tool to reduce uncertainties in global circulation models. Due to the nesting strategy of regional climate models, ensemble integrations using only one set of driving data is not straightforward. Time-lagged methods as used for global climate models do not perform well, because the perturbations are advected out of the model domain after a few weeks. So other perturbation techniques have to be explored to create ensemble simulations for regional climate models.

In this study a simple stochastic perturbation of the tendencies from the physical parameterizations was used to investigate one possible ensemble strategy for the regional climate model REMO. In principle the same method was already successfully applied to the global model from ECMWF and in a case study for the limited-area weather prediction model LM of the German Weather Service (DWD).

One control and several ensemble runs with the regional climate model REMO for Europe were performed at a horizontal resolution of  $0.5^\circ$  ( $\sim 55\text{km}$ ). All runs have been carried out for 10 years (1979-1988) and were forced by ERA-15 Reanalysis data at the lateral boundaries. First results of the analysis focusing on extreme precipitation events in the Rhine basin will be shown.