



Coupling COSMO-CLM regional climate model with the WaSiM hydrology model

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The contribution considers coupling the COSMO-CLM (CCLM) version 4.8 regional climate model with the distributed hydrology model WaSiM-ETH 9 applying the OpenPALM model coupler. The coupled system is implemented for the catchment of the Ammer River (600 km²) located in the Bavarian Ammergau Alps. CCLM operates in convection permitting mode at spatial resolution of 1 km by 1 km in a nested approach with ERA-Interim reanalysis data on a rotated coordinates grid. The WaSiM model runs on a 100 m grid in UTM projection and the CCLM data input is interpolated on to this grid applying the Thiessen polygon method. The models utilize MPI and OpenMP based parallel codes and the data exchange is facilitated every full model hour.

The contribution discusses the general issues of hydrological simulations driven with biased NWP/RCM data input. Then it presents the coupled system, its advantages and limitations, and the evaluation of obtained results in the complex terrain of the Ammer River in comparison with measurements from river gauges and EC stations operated within the “preAlpine” long term observatory TERENO.