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First results of a comparison study of multi-domain REMO CORDEX simulations between 0.11° and 0.22° resolution with ERA-Interim forcing

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Within the framework of WCRP CORDEX, the CORE (CORDEX Coordinated Output for Regional Evaluations) experiment provides a homogeneous ensemble of regional climate projections for 9 domains covering all land areas of the globe with the exception of the Arctic and Antarctic regions (<http://www.cordex.org/experiment-guidelines/cordex-core/>). CORDEX-CORE provides data from two regional climate models (REMO2015 and RegCM), driven by 3 GCMs and under 2 RCP scenario conditions at a resolution of about 25 km. In addition, within the same framework, simulations of the current climate, driven by ERA-Interim, were carried out for all areas with REMO2015 at a grid resolution of approx. 25 km.

Within the German Project ViWA (Virtual Water Values, <https://viwa.geographie-muenchen.de>), simulations with the regional climate model REMO2015, driven by ERA-INTERIM analyses were carried out for the same regions globally, but on a significantly higher spatial resolution of approx. 12.5 km. These simulations cover the time period from 2015 to 2018. Comparing these highly resolved simulations to the coarsely resolved CORDEX-CORE simulations, can give indications, in which regions and for which processes the CORDEX-CORE resolution of 25 km is sufficient and where a higher resolution brings a clear added value.

We will show first results of this comparison, focusing on selected regions and processes which potentially benefit from higher spatial resolution of the simulations.