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CORDEX experiments with the RCM 'CCLM' using the DKRZ modelling environment IMDI

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The Coordinated Regional climate Downscaling Experiment (CORDEX) is an international framework for the performance of regional projections of the global climate simulations produced in CMIP5 (Coupled Model Intercomparison Project Phase 5). State-of-the-art Regional Climate Models (RCM) participating in CORDEX will deliver a comparable database for the scientific community, which will also serve as a data base for the AR5 (5th Assessment Report) of the IPCC (Intergovernmental Panel on Climate Change).
CORDEX specifies experiments and periods to downscale, regional domains and grids, variables and their time aggregations. The data archive content will be divided in the priority classes Core (monthly, seasonal means), Tier1 (daily means), and Tier2 (3 and 6 hourly time series). The post-processed data will be placed and published for scientists and other users in a central archive at DMI (Danish Meteorological Institute).
Our poster describes the contribution of the RCM CCLM (Cosmo Climate version of Local Model) which has been produced within the IMDI (Integrating Model and Data Infrastructure) workflow implemented at the DKRZ (German Climate Computing Center). CCLM is the unified weather forecast and Regional Climate Model of the German Weather Service (DWD).
The IMDI workflow includes model compilation, pre-processing of global CMIP5 forcing data, dynamical downscaling to regional scales, monitoring of the runs, and post-processing as well as archiving of the model raw output data. The post-processing prepares the data for inclusion into the central CORDEX data archive at DMI by appropriate settings of units, file formats and names, and metadata for content description.
The experiments of our CORDEX contribution include the years 1950 to 2005 of the CMIP5 'historical' experiment and the full lengths of the newly developed future RCP (Representative Concentration Pathways) scenarios 'rcp45' and 'rcp85' covering the years 2006 to 2100.
Forcing from 4 global CMIP5 models will be used, of which the experiments driven by data from the MPI-ESM (Max Planck Institute for Meteorology Earth System Model) and HadGEM2-ES, the Earth system model of the Hadley Centre, Met. Office have been finished.
Two out of the 12 CORDEX domains are used: Africa, which is the CORDEX priority domain, and Europe. Africa will be run at two resolutions (0.44 and 0.22 deg) and Europe on a very high resolution grid (0.11 deg). Therefore, in particular the Africa experiments performed at DKRZ allow the investigation of the impact of different resolutions, different forcing data, and different scenarios on the simulated climate.