Performance of RegCM3 in Simulating Western Africa present time Climate

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Abstract:

The regional climate model RegCM3, developed at the Physics of Weather and Climate (PWC) group at ICTP, is used for high resolution simulations over Western Africa. The initial and boundary conditions (ICBCs) are from NCEP/NCAR Reanalysis Project (NNRP). The model is run for 16 years at 40km horizontal resolution. Results are validated against NCEP and CRU data. Patterns of fields like precipitation and temperature are close to the observation at monthly and seasonal scales. The interannual variability of rainfall over the Sahel is also well captured by the model during that period characterized mostly from mid 90's by a seesaw between wet and dry years. This recovery tendency over Sahel followed the end of the long drought which struck this potion of West Africa in the 1970s and 1980s. These results give new prospects in dynamical downscaling from GCMs as far as the forcing fields in the boundaries are realistic for regionalisation in climate change projections and seasonal prediction.