



Regional scale model simulation for West Africa using a Mesoscale Model MM5

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Dynamical downscaling is considered as a good tool for deriving regional climate information based on large scale climate conditions because they can represent surface conditions like topography and vegetation more realistic than GCM. The fifth generation Pennsylvania State University (PSU)-National Centre for Atmospheric Research (NCAR) Mesoscale Model MM5 is used to study the regional scale process that control West African rainfall, its associated circulations and other surface features. The simulations are carried out for seven months from March to September using 1.125X1.125 degree lat/lon version of ECMWF reanalysis data for defining the initial and lateral boundary conditions. The objective is to study the monsoon structure from the first rainy season in Guinea (5N) to the sahelian rainfall peak in August. The year 2000 is taken as a reference year in order to validate the model simulation for further study. The results are compared with reanalysis and observed data, then statistical methods are used to study temporal and spatial relationships among various field parameters with 60 km resolution. Preliminary results show that the model is able to reproduce a more realistic rainfall field than the reanalysis