

P39 Assessment of WRF land surface model performance for simulating meteorological variables over West Africa.

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The Weather Research and Forecasting (WRF) model was used to examine the effect of Land Surface Model (LSM) physics on some simulated meteorological variables over a variety of land surface conditions that would affect the surface energy budget, including the wet and dry season over West Africa.

Two three-months (July-September 2012 and December-February 2011/2012) of high-resolution simulations were made for a domain over West Africa (300N, 100S) (270W, 270E) at 12km, and a nested domain (140N, 11015'N) (30E, 7015'E) at 4km horizontal grid resolution using four different land surface schemes with different physics combinations. The nested domain is centered over part of Nigeria and some neighboring countries. Noah LSM (as the most commonly used LSM) was used to test for four different physics combination in which the best combination was used with other three land surface models, which includes the Noah-MP, Community Land Model version 4 (CLM4) and the Simplified Simple Biosphere Model (SSiB). The simulated precipitation was assessed against the TRMM, GPCP, CMORPH and CRU TS datasets, while the surface temperature was compared with Era-Interim, NCEP, GSAT, MERRA and CRU TS. Results show that the choice of LSM has effect on the simulated variables at different land surface conditions over West Africa.