

Preliminary results from RegCM4-CLM4 over the CORDEX-Africa domainGuling Wang[†]; Rui Mei[†] University of Connecticut, USALeading author: gwang@engr.uconn.edu

This poster presents preliminary results over the CORDEX Africa domain from the ICTP RegCM4 with CLM4 as its land surface model. Compared to CLM3.5 already in RegCM4, the latest version of the NCAR Community Land Model CLM4 includes extensive modifications in soil hydrology, vegetation canopy hydrology, and snow hydrology to address known biases in the surface water budget, and also includes the carbon-nitrogen biogeochemical model (CN) as an option (which can be used to simulate plant phenology). In this study, the CLM3.5 in RegCM4 is updated to CLM4-CN, and the corresponding representation for vegetation dynamics is also incorporated into the model. The performance of the resulting model in the CORDEX-Africa domain will first be documented in comparison with observations/reanalysis data, focusing on precipitation spatial and temporal distribution and timing of the West African monsoon onset. The performance will also be compared with earlier versions of the ICTP regional climate model. Preliminary results on how African climate will respond to future climate changes will be also presented.