



The West African Monsoon in the Regional Climate Model COSMO-CLM

S. Kothe (1,2) and B. Ahrens (2)

(1) LOEWE Biodiversity and Climate Research Centre, Institute for atmospheric and environmental sciences, Frankfurt am Main, Germany (kothe@iau.uni-frankfurt.de), (2) Goethe-University Frankfurt, Institute for Atmospheric and Environmental Sciences, Frankfurt am Main, Germany

The West African Monsoon is in parts of Africa the exceedingly climatic process with a high influence on flora, fauna and economy. In this study we evaluated ECHAM5 and ERA-Interim driven CCLM regional climate simulations of Africa to analyze the reproduction of characteristics of the West African Monsoon in the model. As indicators for the monsoon we looked at the total precipitation and the outgoing long-wave radiation (OLR) as a hint for convective clouds. Additionally the West African Monsoon Index (WAMI) should give a view at the dynamical component of the monsoon. Compared to the large-scale driving models, CCLM was not able to achieve more accurate results. There were regional strong under- and overestimations in precipitation but the mean values showed quite good results with a maximum difference of about 20%. For the ECHAM5 driven CCLM simulation, the strongest overestimation of precipitation at the African West coast, was combined with a strong overestimation of OLR, which indicated too much convection in this area. The model caught the WAMI very well. In a next step we want to quantify the influence of the driving model and the impact of surface features like the surface albedo on the monsoon.