



## **Steps towards regional climate modelling in tropical Westafrika using a nonhydrostatic mesoscale model: studies on AEW dynamics**

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**ABSTRACT:** During summer 2002, an intense observational campaign in Benin allowed identification and classification of rainfall events in the Upper Ouémé valley. Hind casts with the *Lokalmodell* (LM) of the German Weather Service showed some deficiencies in the short to medium range forecasts of observed events. In most cases, insufficient initial states especially of moisture fields could be identified as causes of failures. But also in the dynamics of the AEW, which are obviously essential for the generation of mesoscale convective systems, problems seemed to arise.

Concept studies with idealized initial conditions have been undertaken in order to simulate AEW dynamics and according precipitation on time scales of 1-3 months. The initial fields were changed stepwise to more realistic conditions, showing the effect of orography, SST and soil moisture on rainfall prediction on monthly timescales. Although the model results in general are acceptable, still some differences to observations in location and strength of the AEJ exist.