



Modelling the influence of soil moisture heterogeneity on the dynamics of the atmospheric boundary layer.

G. Devine (1), D. Parker (1), C. Taylor (2) and P. Harris (2)

(1) School of Earth and Environment, University of Leeds, UK, (2) Centre for Ecology and Hydrology, Wallingford, UK (g.devine@see.leeds.ac.uk)

Aircraft observations of soil moisture-induced circulations have recently been obtained over the Sahel region of West Africa during the AMMA campaign. These observations have shown that rainfall from a typical convective system creates sufficient soil moisture anomalies to affect the near-surface wind field. The ability of models to replicate such atmospheric responses is therefore crucial in accurately representing the meteorology of this region.

The work presented here will examine how well the observed dynamical response is captured in model simulations. The model will then be used to study the boundary-layer response to a range of observed and idealistic soil moisture patterns, and to observe the nature of such responses through the full diurnal cycle.