



Soil moisture initialization effects in the Indian monsoon system

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The land-atmosphere interaction tends to be particularly important in transitional zones between dry and wet seasons. Indeed, it is very important to know the processes that lead the fluctuations and factors that trigger the transition. Towards the goal to understand the role of land-surface processes and to improve the simulations over the South Asia (particularly, the Indian subcontinent), a series of sensitivity simulations are performed in order to quantify the soil moisture effects using a modified version of the state of the art non-hydrostatic regional climate model COSMO-CLM (www.clm-community.eu). The sensitivity experiments are conducted for the whole ERA-Interim period (1989-2008), in which two perturbed soil moistures (DRY and WET) are initialized, and subsequently compared with the control simulation. These sensitivity tests explain the soil water initialization impacts to the model results, as well as impacts over the South Asia monsoon climate, which mostly depends on the characteristics of the underlying soils.