



Parametrization and observation of the orographic triggering of deep convection over West Africa

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During AMMA SOP 2 (summer 2006), a clear diurnal cycle of the initiation of deep convection over land was observed. Every day, new convective areas would appear, starting around 13:00 local time, and then evolve in various ways: propagate away from their birth place or stay there; create a MCS that would survive during at least a part of the night, or simply vanish at sunset. What we are concerned with, here, is the triggering phase and its link with orography.

We present: (i) a diagnostic, from MSG infrared data, of the initiation of convection over West Africa and of its correlation with orography; (ii) a parametrization of the effect of orography on the triggering of convection, implemented in LMDZ4 GCM using Emanuel convection scheme. Then we analyse how such a parametrization may improve the diurnal cycle of simulated convection: (i) by yielding the proper timing over mountains; (ii) by making it possible to tighten the triggering conditions over plains, thus delaying convection initiation everywhere over continents.