

**HYDROLOGICAL BEHAVIOUR OF THE DONGA CATCHMENT: TESTING
SOME MODELLING ASSUMPTIONS**

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A model was developed in order to test some assumptions on the hydrological behaviour of the Donga catchment (586 km², Benin). These include the development of sub-surface flows during the rainy season, which have been modelled with a classical TOPMODEL formulation. A deep percolation term was added for taking account of a water table which is disconnected from the river network. Finally, a simple parameterisation of the evapotranspiration losses was proposed, depending on the atmospheric demand, the vegetation intra-seasonal dynamics and the surface soil moisture conditions.

The poster will illustrate some sensitivity analysis and the first results on the modelling of the catchment water cycle at daily time step over the 1998-2004 period. The model structure appears to be robust and well conditioned by the forcing data. Moreover, the partitioning between simulated surface runoff, sub-surface flows and actual evapotranspiration seems to reflect the observed one.



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Convective wind system with aerosols, named "haboob", Hombori in Mali, West Africa.