



## **Importance of temporal rain disaggregation of an atmospheric model precipitation field to force a hydrologic model applied over a Sahelian watershed**

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A "one-way" forcing experiment between the regional atmospheric model MAR (Modèle Atmosphérique Régional) and the Hortonian hydrologic model ABC has been performed over the Sirba watershed (39000 km<sup>2</sup>) located in the Sahelian region during the dry year 1984.

The MAR has reproduced satisfactory cumulative rainfall fields, and has been able to simulate the temporal evolution of precipitation in good agreement with observations at weekly and monthly timescales. However, the comparison between simulated and observed discharges - using rainfall datasets as forcing of the hydrologic model - has shown that the representation of daily precipitation was not sufficiently accurate to correctly simulate the hydrologic response of the watershed. In order to produce more realistic infra-daily precipitation associated with convective events, a temporal disaggregation scheme has been developed and has really improved the simulated discharge at the catchment outlet.