

Extreme events prediction in two catchment basins of the East of Algeria

Hydrological modeling has become a means that cannot be overlooked for decision support as regards good water resources management especially in the presence of climate change and doomsday scenarios. There are many means such as: physical modeling, conceptual modeling and stochastic modeling. To achieve a good modeling, observed data series of rainfall and flow rates are required.

The Spatialized Hydrologic Workshop, ATHYS, collects together in a user-friendly and homogenous environment a set of spatialized hydrological models, linked with hydro-climatic and geographic data processing: (Christophe Bouvier HSM Montpellier).

This software, developed by the IRD, is suitable for various applications such as water resources management, extreme events forecasts, and studies on the impact related to anthropogenic or climatic changes.

In this work, ATHYS is applied to forecast extreme events in two catchment basins of the east of Algeria; Bouhamdene catchment basin of the Wilaya of Guelma and Kissir catchment basin of the Wilaya of Jijel.

Considering that ATHYS specialty is a spatialized modeling of rainfall-runoff relationship, we have, therefore, applied a range of distributed models, and to back up our results, we compared the results obtained with those stemming from a global model to confirm or invalidate the performance of distributed models.

Keywords: Extreme events; rainfall-runoff model; ATHYS; catchment basin; spatialized; forecast; global; distributed.