



Impact of Rainfall Estimation Uncertainty on Hydrological Modelling of the Senegal River Basin

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For large catchment areas, and especially in regions where an extensive rain gauge and radar network does not exist, it is possible to estimate rainfall levels by using a combination of satellite and rain gauge inputs. However in order for these estimates to be useful, their uncertainty must be quantified. For use with a hydrological model, not only must the input uncertainty be calculated, its effect upon the model structure and any uncertainty within must also be determined.

The impact of rainfall estimation uncertainty on hydrological model uncertainty is being studied using ensemble rainfall products derived from various combinations of geostationary satellite data and limited rain gauge network. These are used to drive ensemble runs of a lumped Pitman model of the Senegal River Basin. It is intended to further the study by examining the effects of moving from a single lumped Pitman model for the entire catchment and a semi-distributed Pitman model for the same area.