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Comparison of two model structures in simulating water resources for the Mpologoma basin, within the Upper Nile

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The estimation of basin water resources normally involved several uncertainties including the estimation of input precipitation, model identification and parameterisation. Two model structures are tested to reproduce the hydrological regimes of the Mpologoma basin within the Upper Nile. In this application, the performance of the hydrological models highly depends on the spatial representation of the input precipitation patterns, model optimisation. The results suggest that model performance is highly dependent on precipitation and less dependent on the model structures (lumped vs semi lumped). The ways forward for rainfall modelling and hydrological simulation in the Upper Nile are discussed.