



## **A Bayesian approach to hydroclimatic prognosis using the Hurst-Kolmogorov stochastic process**

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It has now been well recognized that hydrological processes exhibit a scaling behaviour, also known as the Hurst phenomenon. An appropriate way to model this behaviour is to use the Hurst-Kolmogorov stochastic process. This process is associated with large scale fluctuations and also enhanced uncertainty in the parameter estimation. When we have to make a prognosis for the future evolution of the process, the total uncertainty must be evaluated. The proper technique to do this is provided by Bayesian methods. We develop a Bayesian framework with Monte Carlo implementation for the uncertainty estimation of future prognoses assuming a Hurst-Kolmogorov stochastic process with a non-informative prior distribution of parameters. We derive the posterior distribution of the parameters and use it to make inference for future hydroclimatic variables.