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RIVER FLOOD FORECASTING WITH A TRANSFER FUNCTION MODEL

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ABSTRACT

An upgraded version of transfer function (TF) model was developed to analyse and forecast the behaviour of the river Pinios in Greece. The model utilises distributed rainfall information from several rain gauges together with upstream flow data and predicts the river flow at the Ali Efenti catchment outlet. In the work presented in this paper, a variable lag is introduced to a TF model. The inclusion of this explicit time delay, instead of a single value, makes the model particularly suitable for real-time forecasting applications.
Furthermore the application of an updating technique to yield an overall estimated output in the context of real-time river management is explored. Initial results show that the upgraded non-linear TF model coupled with real-time updating techniques produce an excellent 10-hour lead time flow forecast.

Keywords: variable lag, non-linear Transfer Function, River Pinios, flood forecasting