Comparative study of temporal neural networks for short term flood forecasting

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Abstract

The artificial neural networks (ANNs) have been applied to various hydrologic problems recently. This research demonstrates a temporal approach by applying Jordan and general recurrent neural network to rainfall-runoff modeling for the upper area of Wardha River in India. The model is developed by processing online data over time using general recurrent connections. Methodologies and techniques of the two models are presented in this paper and a comparison of the short term runoff prediction results between them is also conducted. The prediction results of the general recurrent neural network indicate a satisfactory performance in the three hours ahead of time prediction. The conclusions also indicate that the general recurrent network is more versatile than Jordan model and can be considered as an alternate and practical tool for predicting short term flood flow.

Reference
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Index Terms

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Computational Model

Key words

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Forecasting
Rainfall
Runoff
Models