

## Time Series Modelling and Prediction of River Runoff: Case Study of Karkheh River, Iran

**Authors :** Karim Hamidi Machekposhti, Hossein Sedghi, Abdolrasoul Telvari, Hossein Babazadeh

**Abstract :** Rainfall and runoff phenomenon is a chaotic and complex outcome of nature which requires sophisticated modelling and simulation methods for explanation and use. Time Series modelling allows runoff data analysis and can be used as forecasting tool. In the paper attempt is made to model river runoff data and predict the future behavioural pattern of river based on annual past observations of annual river runoff. The river runoff analysis and predict are done using ARIMA model. For evaluating the efficiency of prediction to hydrological events such as rainfall, runoff and etc., we use the statistical formulae applicable. The good agreement between predicted and observation river runoff coefficient of determination ( $R^2$ ) display that the ARIMA (4,1,1) is the suitable model for predicting Karkheh River runoff at Iran.

**Keywords :** time series modelling, ARIMA model, river runoff, Karkheh River, CLS method

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