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# Low flow time series forecasting

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Water allocation from unregulated rivers extremely depends on amount of river discharge. The surface management in such cases is directly influenced by streamflow forecasting, especially in the low flow context. In this research the one, three and seven day low flow time series for Naavroud River in Anzali lagoon basin (situated in North of Iran) have been forecasted using traditional stochastic (Autoregressive Integrated Moving Average, ARIMA) and Adaptive Network based Fuzzy Inference System (ANFIS) models. The performance of the stochastic models has been compared with the neurofuzzy model. In the case of monthly low flow model based on previous values of the same year, the results showed that the neurofuzzy model has a better performance than the simple ARIMA. On the other hand, the ARIMA model has demonstrated the best performance for monthly low flows that are forecasted using the values from previous years. In conclusion, the stochastic models result more accurate forecasted values than the neurofuzzy models for one, three and seven day low flow time series. Furthermore, the results of this study indicated that in all neurofuzzy and stochastic models, the error in forecasting three day flow is less than the error of one and seven day low flow