

عنوان مقاله:

Monthly Flow Forecasting by Time Series Models in Ghezelozan River Monireh Biabanaki, Seyed Saeid Eslamian

محل انتشار:

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خلاصه مقاله:

Time series are samples from a stochastic process in the time period. The most important aim of time series analysis is modeling changes and forecasting. The main objective of time series forecasting is estimating data values for the future. In this study, time series models have forecast monthly flow of Ghezelozan River at Gilvan station. For this purpose, monthly flow data from October 1962 to September 2000 have been used. Data dependency has been detected by Box- Ljung statistic and the limitations have been determined by standard error criteria of Bartlett approximation. The records have been normalized and ARIMA (1,0,1) or ARMA (1,1) model has been selected as the suitable model for time series analysis. Then, model parameters have been estimated by maximum likelihood method. Independency and normality tests for model residuals have been performed. Also AIC statistics have been computed for the ARIMA (1,1,0), ARIMA (1,0,1), ARIMA (2,1,0) and ARIMA (2,1,1), which values were 1137.90, 1070.94, 1080.97 and 1073.37, respectively. These values Justified ARIMA (1,0,1) model is the best one and the monthly flow of river has been forecasted. For model validation, record period from October 1962 to October 1963 has been used for forecasting monthly flow time series from November 1963 to September 2000 by real time method and choice of unique lead time. Results have been compared with the observed time series for the same periods. It indicates that both time series have not a significantly difference. In fact, the model displays an appropriate accuracy for real time forecasting monthly flow for Ghezelozan River at Gilvan station.

کلمات کلیدی:

Hydrologic Time Series, Climate Forecasting, Real Time Forecasting, ARMA Model, AIC Statistics, Ghezelozan River

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