

Predicting the monthly discharge of KAKAREZA River using time-series models ARIMA seasonal.

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Abstract

Study the time changes in discharge of watersheds are important and it is more important in low flow seasons. For this purpose, there are different statistical and probabilistic models that have been offered and developed. In this study, a 30-year time series of average monthly discharge in KAKAREZA River has been analyzed. KAKAREZA River locates in Lorestan province, Selsele city. In the first step autocorrelation function and partial autocorrelation function data were drawn in XLSTAT software, after that data were normalized by using BOC-COX way. In The next step, the data has been determined and result show non-stationary of data. Then, proceeding of data omitted in MINITAB software by difference procedure formula. Then, the mode was detected according to Akaike's Information criterion (AIC). At this point the appropriate model with the lowest Akaike was selected. At the end, four periods of 12, 24, 60 and 84 months were predicted. Result showed that a 12 month period has a coefficient Nash–Sutcliffe of 0.85. In this way, the short period of 12 months showed better Prediction.

Keywords: time-series, predicting, KAKAREZA, model, seasonal ARIMA.