



Auto-regressive integrated moving average (ARIMA) modeling of rainfall process: estimation and forecast

V. Jovanovski, T. Delipetrov

Faculty of Mining and Geology, University "Sts. Cyril and Methodius", Skopje, Macedonia,
(vlatkoj@rgf.ukim.edu.mk / Phone: +389-75-481635)

The changes of hydro-meteorological characteristics have effect on surrounding. The problems in the river Bregalnica basin (Eastern part of the Republic of Macedonia) are the result of abundant rainfalls and long drought periods. Observing and understanding the hydro-meteorological effects may provide good estimate and forecast in several fields (geology, mining, agriculture, management of water resources and civil engineering).

The paper has developed analysis of hydro-meteorological rainfall process witch define the conditions for genesis and processing observed data.

Visualization of data on the hydro-meteorological changes in the river basin provides a good estimation and forecast. Time Series of rainfalls can be analysis with stochastic methods.

ARIMA models analysis data on annual rainfalls. ARIMA models are good technique for estimation & predict of hydro-meteorological variations.

The models for analysis, estimation and forecast can be calculated in several fields (economy, industry, research, manufactures, monitoring). Only we need long time series of data.