

Analysis of the time series of extreme values of precipitation in Barreiras-BA

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Abstract: *Heavy rains can cause numerous trouble and inconvenience to society. This has motivated several applications of statistical methods to model extreme rainfall events. The main objective of this work was to study a historical series of extreme values of the rainfall of the city of Barreiras/BA by means of the analysis of time series using the Box and Jenkins methodology. The analyzed variable was the daily precipitation, measured in millimeters (mm) comprising a period of 49 years. The results indicated the SARIMA model class as the most suitable for modeling the maximum monthly precipitation. The SARIMA model $(0,0,0)(1,1,1)_{12}$ was the most indicated by the information criteria used in the adjustment. However, SARIMA $(1,0,0)(1,1,1)_{12}$ presented better results than the accuracy statistics used. In general, both models presented good forecasts for the analyzed series, indicating that the SARIMA model class would be adequate for the modeling of the maximum precipitation data, allowing the identification of patterns in the series.*

Keywords: Floods; Forecast; SARIMA.

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