RESEARCH ARTICLE

FORECASTING MONTHLY PRECIPITATION MODEL FOR DANTEWADA, JAGDALPUR AND SUKMA REGION (CHHATTISGARH) USING ARIMA MODEL

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Abstract: Earlier forecasting was based on observing weather patterns. Latter-days weather forecasting involves a combination of computer models, observations and knowledge of tends and patterns. This paper describes the Box-Jenkins time series seasonal ARIMA (Auto Regression Integrated Moving Average) approach for prediction of rainfall on monthly scales. ARIMA model of Dantewada (0, 0, 1) (0, 1, 1), Jagdalpur (0, 0, 0) (1, 1, 1), Sukma (0, 0, 1) (1, 1, 1) for rainfall was identified the best model to forecast rainfall for next 5 years with confidence level of 95 percent by analyzing last 30 year's data (1989-20018). Previous years data is used to formulate the seasonal ARIMA model and in determination of model parameters. The performance evaluations of the adopted models are carried out on the basis of correlation coefficient (R^2) and root mean square error (RMSE). The study conducted at three cities Dantewada, Jagdalpur & Sukma, Chhattisgarh (India). The results indicate that the ARIMA model provide consistent and satisfactory predictions for rainfall parameters on monthly scale.

Keywords: Rainfall, ARIMA, Correlation Coefficient (R^2), Root Mean Square Error (RMSE)

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