RESEARCH ARTICLE

TIME SERIES ANALYSIS MODEL TO FORECAST RAINFALL FOR JAGDALPUR REGION (CHHATTISGARH)

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Abstract: The prediction of Rainfall on monthly and seasonal time scales is not only scientifically Challenging but is also important for planning and devising agricultural strategies. Various research groups attempted to predict rainfall on a seasonal time scales using different techniques. 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 (0, 0, 0) (0, 1, 1) for rainfall was identified the best model to forecast rainfall for next 4years with confidence level of 95 percent by analyzing last 27 year's data (1990-20016). 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 Jagdalpur, 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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