

can say that the daily rainfall in Makurdi is accurately predictable as from 1st January 2011 for the next 112 days while the daily average temperature was found to be predictable for the next 174 days.

5. Conclusion

In this work, the dynamics of daily rainfall and temperature in Makurdi over the last three decades was investigated using the tools of nonlinear dynamics. The outcome of this analysis confirmed that both rainfall and temperature in Makurdi exhibit chaotic behavior and while the daily rainfall time series requires a minimum of two (2) and maximum of eighteen (18) variables for the modeling of its dynamics, the daily temperature time series requires a minimum of six (6) and maximum of seventeen (17) variables for the modeling of its dynamics. It was also estimated via the largest Lyapunov exponents that the daily rainfall and temperature over Makurdi are predictable for the next 112 and 174 days respectively.

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