

ABSTRACT

APPLICATION OF AUTOREGRESSIVE INTEGRATED MOVING AVERAGE (ARIMA) MODEL FOR PREDICTION OF HOTSPOT IN ROKAN HILIR DISTRICT

Hotspots are locations of heat on the surface of the earth, where these points are indicative of forest and land fires. The area around the hot spot is an area prone to fire. Rokan Hilir is one of the regencies that has the most hotspots in Riau Province. Pekanbaru Meteorological Station owned by BMKG via NASA's Terra / Aqua-MODIS remote sensing satellite, on August 18, 2018 detected 103 hotspots indicating forest and land fires, 97 of which were in Rokan Hilir. Based on the problems in this study, the writer will design a hotspots forecasting model to prevent the expansion of forest and land fires. Forecasting time series uses historical data to predict future data. The time series forecasting model used in this study is ARIMA because it has a better method accuracy compared to other methods such as Multivariate, Random-walk with Drift and Exponential Smoothing based on several previous studies. The objective of this research is to apply the Jenkins box procedure to build the ARIMA model that matches the data and to apply the ARIMA model obtained to make predictions of the occurrence of hotspots in July - December 2019. The best model is ARIMA (0, 0, 1) with non-zero mean with AICc value of 405.12 with MAE value of 3.471168.

Keywords: Hotspots, ARIMA, Rokan Hilir