

**UNIVERSITI TEKNOLOGI MARA**



**GLOBAL WARMING IN MALAYSIA: FORECASTING FOR THE  
NEXT FIVE YEARS**

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## ABSTRACT

Global warming affect some human activities such as construction and agriculture. These activities affect the climate change and rising in temperature. In 2050, the world temperature was estimated to increase by  $1.5^{\circ}\text{C}$ . Hence, this research was conducted to model and forecast monthly temperature of specific area in Malaysia which are Cameron Highland and Petaling Jaya observed from January 1990 to December 2019. The Seasonal Autoregressive Integrated Moving Average (SARIMA) were applied to the monthly temperature for both places for modeling and forecasting purposes. The best models were evaluated by Akaike's Information Criterion (AIC), Bayesian's Information Criterion (BIC) and error measures; Mean Square Error (MSE), Root Mean Square Error (RMSE) and Mean Absolute Percentage Error (MAPE). The model that satisfied all criterion is the chosen one. The best model to forecast monthly temperature of Cameron Highland is  $\text{SARIMA}(2, 1, 1)(3, 1, 1)_{12}$ , while for monthly temperature of Petaling,  $\text{SARIMA}(1, 0, 4)(3, 1, 2)_{12}$  is the most suitable SARIMA model. The result of forecasting show that the monthly temperatures for both places are expected to increase for the next five years and become an alarm for higher authorities for further actions.

Keywords: Forecasting, SARIMA Model, global warming

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