

## Dynamic regression intervention modeling for the Malaysian daily load

### ABSTRACT

Malaysia is a unique country due to having both fixed and moving holidays. These moving holidays may overlap with other fixed holidays and therefore, increase the complexity of the load forecasting activities. The errors due to holidays' effects in the load forecasting are known to be higher than other factors. If these effects can be estimated and removed, the behavior of the series could be better viewed. Thus, the aim of this paper is to improve the forecasting errors by using a dynamic regression model with intervention analysis. Based on the linear transfer function method, a daily load model consists of either peak or average is developed. The developed model outperformed the seasonal ARIMA model in estimating the fixed and moving holidays' effects and achieved a smaller Mean Absolute Percentage Error (MAPE) in load forecast.

**Keyword:** Dynamic regression; Linear transfer function; Moving holidays' effects; SARIMA