

ABSTRACT

PEREIRA, Cesar Machado. *Fuzzy modeling to forecast an electric load time serie*. 2015. 101f. Dissertação (Mestrado em Engenharia Eletrônica) – Faculdade de Engenharia, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2015.

This dissertation tests and compares two types of modelling to predict the same time series. A time series of electric load was observed and, as a case study, were opted for the metropolitan region of Bahia State. The combination of three exogenous variables were attempted in each model. The exogenous variables are: the number of customers connected to the electricity distribution network, the temperature and the precipitation of rain. The linear model time series forecasting used was a SARIMAX. The modelling of computational intelligence used to predict the time series was a Fuzzy Inference System. According to the evaluation of the attempts, the Fuzzy forecasting system presented the lowest error. But among the smallest errors, the results of the attempts also indicated different exogenous variables for each forecast model.

Keywords: Forecast; Time Series; Electric Load; SARIMAX; Fuzzy Inference System.