

## **FUZZY SHORT-TERM ELECTRIC LOAD MODELING AND FORECASTING**

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### **Abstract**

Electrical load forecasting is an essential tool used to ensure that the energy supplied by utilities meets the load and the energy lost in the system. To this end, a staff of trained personnel is needed to carry out this specialized function. Electric load forecasting is always defined as the science or art of predicting the future load of a given system, for a specified period ahead. These predictions may be just for a fraction of an hour ahead for operation purposes or as such as twenty years in the future for planning purposes. Two models are developed in this paper, namely model B and Model C, model B is a harmonic model of the time horizon only, while model C is a hybrid model. The parameters of the two models are assumed fuzzy and are estimated using the fuzzy regression algorithm. Having obtained the fuzzy parameters, the fuzzy load for twenty-four hour ahead is predicted. Results of predication of 24 h load ahead for a utility company are presented. It has been found using such fuzzy model; a reliable operation for the electric power system could be obtained.

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