PERBANDINGAN JARINGAN SARAF TIRUAN MODEL STATIS DENGAN MODEL DINAMIS UNTUK PERAMALAN BEBAN JANGKA PENDEK

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ABCTRACT

Short-term load forecasting is aimed at predicting electric energy that will consumed for a period of hours or weeks to take a policy in controlling the schedule of power system. The load level for each hour was determined by watching the load behavior in the past through every information that can be influenced load level of the system.

Many of methods have been done in this short-term load forecasting, such as by using Artificial Neural Network (ANN). An Artificial Neural Network, a computation model, is designing based on biologic neural network. ANN is able to map input to output efficiently and accurately since some of training and testing.

The purpose of this research is to compare two models of ANN such as static and dynamic models that applied for short-term load forecasting. The main differences between static ANN models and dynamic ANN models are neural structures and patterns training data. Static models consist of twenty-four input layers, twenty-four output layers, and two hidden layers that each of them has forty-nine neural cells. Otherwise, dynamic models consist of eight input layers, one output layer, and one hidden layer that has seventeen neural cells.

Training and testing data for static and dynamic models have been applied daily load data of West Sumatera sub system that took at National Electric Power, Power System Load Units West Sumatera Riau Lubuk Alung. The result of testing during one week shown that average error for static ANN models and dynamic ANN models are 5.71975 % and 5.41366 %. Whereas average standard deviation for both ANN models are 10.9833 MW and 10.47560 MW.

Keyword: Artificial Neural Network (ANN), static model, dynamic model.