

## **Forecasting sunspot numbers with Feedforward Neural Networks (FNN) using 'sunspot neural forecaster' system**

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### **ABSTRACT**

This paper presents the investigations of forecasting performance of different type of Feedforward Neural Networks (FNN) in forecasting the sunspot numbers. Feedforward Neural Network will be used in this investigation by using different learning algorithms, sunspot data models and FNN transfer functions. Simulations are done using Matlab 7 where customized Graphic User Interface (GUI) called 'Sunspot Neural Forecaster' have been developed for analysis. A complete analysis for different learning algorithms, sunspot data models and FNN transfer functions are examined in terms of Mean Square Error (MSE) and correlation analysis. Finally, the best optimized FNN parameters will be used to forecast the sunspot numbers.

### **KEYWORDS:**

Sunspot numbers; Feedforward Neural Networks (FNN); Mean Square Error (MSE)

## **ACKNOWLEDGMENT**

The authors would like to thank the Ministry of Higher Education, Malaysia for supporting this research under the Fundamental Research Grant Scheme (FRGS) vot 0422 and Universiti Malaysia Pahang under short term grant vot rdu100383

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