Abstract

In this paper, a novel hybrid model for fitting and forecasting a univariate time series is developed based on ARIMA and HyFIS models. The linear part is fitted using ARIMA model whereas the non-linear residual is fitted using HyFIS model. Clustering technique is used to determine the number of inputs and the membership functions of the HyFIS model. The hybrid model is applied to the wind speed data. The result is analyzed and compared on the basis of standalone ARIMA, standalone HyFIS and for the hybrid ARIMA-HyFIS model.
Hybrid ARIMA-HyFIS Model for Forecasting Univariate Time Series

- T. Takagi and M. Sugeno, "Fuzzy identification of systems and its applications to
modelling and control”, IEEE transactions on systems, man, and cybernetics, vol. 15, no. 1, pp. 116-132, 1985

Index Terms

Computer Science

Information Sciences

Keywords

ARIMA-HyFIS  ARIMA  HyFIS  Fuzzy Inference System  Clustering.