

ARIMA-BPN時間數列神經網路

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摘要

In this paper we propose an ARIMA-BPN algorithm combining the advantages of ARIMA and Back-propagation networks (BPN). The algorithm is based on BPN and its inputs are the same as ARIMA. It can generate a non-linear function to create an accurate model to predict time series. The BPN algorithm must be modified because residuals will be changed when the weights are changed during continuous BPN training. Therefore, the continuously updated residuals are used as the inputs of ARIMA-BPN. This study examined 6 artificially designed cases and 4 real world cases to evaluate the abilities of the ARIMA, BPN, and ARIMA-BPN. The results showed that ARIMA-BPN is the most accurate method of the three.

關鍵字：time series, ARIMA, Back-Propagation Network.