Thunderstorm Forecasting by using Artificial Neural Network (ANN)

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ABSTRACT

Thunderstorm is a form of weather characteristic containing strong wind, lightning, heavy rain and sometimes snow or hail. It can be associated with a cloud type of cumulonimbus. Depending on its type, thunderstorm has great potential to produce serious damage to human life and property. Therefore, there are many sophisticated instrument used to record weather data such as Doppler radar and satellite. By using these data, based on the statistical, mathematical or soft computing technique can be done in order to predict the occurrence the weather characteristic. This project presents the application of Artificial Neural Network (ANN) in forecasting the thunderstorm occurrence in Shah Alam based on the meteorological data. Therefore, several three-layer feed-forward back-propagation ANNs were developed in Matlab and each network was evaluated by using cross-validation technique. A network with the best performance in terms of its R-value was selected as the best design. Thus, the forecasting of thunderstorm occurrence can be successfully done.

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