Artificial Neural Network Models for Rainfall Prediction in Pondicherry

Abstract

Rainfall forecasting plays an important role in catchment management applications, the flood warning system being one of them. Rainfall forecasting is one of the most difficult tasks given the variability of space, time and other given conditions change rapidly. Over the years, with the evolution of the intelligent computing methods, many rainfall prediction methods have been proposed, Artificial Neural Network being one of the most prominent. Since the last decade, many researchers have proposed different artificial neural network models in order to create accurate rainfall prediction models. In this paper, different artificial neural networks have been created for the rainfall prediction of Pondicherry, a coastal region in India. These ANN models were created using three different training algorithms namely, feed-forward back propagation algorithm, layer recurrent algorithm and feed-forward distributed time delay algorithm. The number of neurons for all the models was kept at 20. The mean squared error was measured for each model and the best accuracy was obtained by feed-forward distributed time delay algorithm with MSE value as low as 0.0083.

References


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Distributed time delay network