Mean Monthly Rainfall Prediction at Benina Station Using Artificial Neural Networks

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Abstract : Rainfall is a highly non-linear phenomena, which requires application of powerful supervised data mining techniques for its accurate prediction. In this study the Artificial Neural Network (ANN) technique is used to predict the mean monthly historical rainfall data collected from BENINA station in Benghazi for 31 years, the period of "1977-2006" and the results are compared against the observed values. The specific objective to achieve this goal was to determine the best combination of weather variables to be used as inputs for the ANN model. Several statistical parameters were calculated and an uncertainty analysis for the results is also presented. The best ANN model is then applied to the data of one year (2007) as a case study in order to evaluate the performance of the model. Simulation results reveal that application of ANN technique is promising and can provide reliable estimates of rainfall.