SVM rainfall forecast model for extreme monsoon rainfall conditions in an urban area: Mumbai, India

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ABSTRACT

Real-time rainfall forecasts at short-term intervals (5-30 min) are necessary for managing urban floods where the flow time is also small. With this objective, a rainfall forecasting methodology has been developed using support vector machine (SVM) technique. The event based model has been developed based on four years (2007-2010) rainfall data recorded at 1-minute interval from an automatic weather station. The present paper describes the methodology and the accuracy of the rainfall forecast model with a lead time of 5-min to 30-min. Based on the results, 5-min, 10-min and 15-min rainfall forecast models were found to give the highest performance in term of R^2 and it was recommended that 15 min should be rainfall interval for recording and forecast purpose for Mumbai.

KEYWORDS

SVM, rainfall, forecast, short-term, urban