THE EVALUATION OF THE RAINFALL SHORT-TERM NOWCASTING IN THE AREA OF RADAR COVERAGE OF SAO PAULO

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ABSTRACT

The evaluation of the rainfall short-term nowcasting within the surveillance area of São Paulo weather radar for different types of precipitating systems, mainly the are associated to floods and landslides in Metropolitan Area of São Paulo, was carried out with an 2D wind advective scheme and rainfall rates estimated by radar. The third-order upstream numerical scheme was used with a uniform wind vector. The rainfall forecast skill for a given time interval was evaluated by the Critical Success Index, Probability of Detention and False Alarm Rate. Quantitatively, the accuracy of the forecast was evaluated with the mean-square error. In general, the precipitation accumulation was underestimated. The forecasts had better skill up to 90 minutes. The average skill based on Critical Success Index for the thresholds of 0.2 mm at 60 minutes the precipitation accumulation are: fontal system (77%), instability line (67,5%), band disperses (58%), convection alone (56,4%) and sea breeze (47%). In general, from 90 minutes of advection (convective systems) and 120 minutes (stratiform systems), the skill of the forecast decreases.

Key words: Flashflooding, Hydrometeorology, Rainfall nowcasting.