

Analysis of Variations in United States Tornado Warning Performance

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The goal of this project was to analyze factors that contribute to the variance in tornado warning performance across the United States. Tornado warnings are currently issued based on radar observed mesocyclones, reports from storm spotters and the personal experience of the forecaster. While the national NEXRAD radar network has contributed to an increase in the nationwide computed probability of detection to 74%, the false alarm ratio and the critical skill index have remained fairly constant at 76% and 22%, respectively. This project applied both human analysis and data mining techniques to tornado occurrence and warning data from all National Weather Service forecast offices from 1990 through 2006 in order to understand why the performance varied from one region of the country to another.