Use of a GIS application to evaluate the accuracy of forecaster and model predictions of snowfall in eastern New York and western New England

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A collaborative project between the National Weather Service Forecast offices in Albany, New York and Greenville-Spartanburg, South Carolina has resulted in the development of a GIS-based application that produces high-resolution analyses of observed snowfall, and calculates errors and biases of corresponding gridded snowfall forecasts based on the observations. This presentation will introduce the application, and summarize the results of multiple associated projects that examine patterns of observed snowfall, and the accuracy and biases of various corresponding snowfall forecasts.

An evaluation of several years of observed snowfall in eastern New York and western New England indicates that observed snowfall is often strongly tied to terrain features, depending on characteristics of the lower-tropospheric flow pattern.   In addition, it appears that the accuracy and bias of National Weather Service snowfall forecasts in this area may also be dependent on interactions between lower-tropospheric flow and terrain. Preliminary results from a comparison of observed snowfall and forecasts from high-resolution models will also be shown, to test whether the models exhibit biases similar to the official forecasts.