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An Objective Probabilistic Prediction Product for Severe Hail Using Satellite Observations

Daniel Lindsey
NOAA/NESDIS, CIRA/RAMM Branch, Fort Collins, United States (lindsey@cira.colostate.edu)

An objective product is being developed that uses a statistical technique to predict the probability of severe hail across much of the continental U.S. The model was built by using observed severe hail reports from 2 warm seasons, along with data from the GOES-12 Geostationary Satellite and the Rapid Update Cycle (RUC) model. Using discriminate analysis, a number of satellite and near-storm-environment predictors were tested, and the best predictors were weighted accordingly to produce the best forecast for hail.

Objective probabilistic forecasts are rarely better than subjective human forecasts, but they can definitely provide very useful guidance to the human forecaster, especially in situations that are more borderline between severe and non-severe. This presentation will explain how the product works, show some examples, and explain how a similar technique might be applied to other meteorological or geophysical phenomena.