

EXTENDING THE FORECAST LEAD TIME OF PULSE SEVERE STORMS USING PROBSEVERE, GLM, AND RADAR DATA

NOAA/NWS CSTAR

Thomas Gard

Pulse severe thunderstorms are a major warm season forecast problem, especially in the Southeast. Pulse severe storms are considered to be ordinary single cell thunderstorms that produce severe winds or hail for a brief period of time. Forecasters presently do not have sufficient guidance to know which cell will become severe or when that sudden transition will occur. This is a major limitation to the timely issuance of warnings. Often, by the time a forecaster realizes that a cell has reached severe limits and issued a warning, the severe phase often is about to end or already has ended. Thus, the lead time for issuing warnings for pulse severe storms is short compared to other types of convection.

The time is right to make a renewed effort to better understand pulse severe storms and develop guidance techniques for improving their detection and warning lead times. We are using output from the NOAA/CIMSS ProbSevere model, data from the Geostationary Lightning Mapper (GLM), high spatial and temporal resolution model output, and radar data to seek indicators that an ordinary cell thunderstorm in the Southeast United States will soon become severe.

We are collaborating with Mr. John Cintineo (CIMSS), one of the developers of ProbSevere),