

Preliminary Results of a U.S. Deep South Warm Season Deep Convective Initiation Modeling Experiment using NASA SPoRT Initialization Datasets for Operational National Weather Service Local Model Runs

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The initiation of deep convection during the warm season is a forecast challenge in the relative high instability and low wind shear environment of the U.S. Deep South. Despite improved knowledge of the character of well known mesoscale features such as local sea-, bay- and land-breezes, observations show the evolution of these features fall well short in fully describing the location of first initiates. A joint collaborative modeling effort among the NWS offices in Mobile, AL, and Houston, TX, and NASA's Short-term Prediction Research and Transition (SPoRT) Center was undertaken during the 2012 warm season to examine the impact of certain NASA produced products on the Weather Research and Forecasting Environmental Modeling System. The NASA products were: a 4-km Land Information System data, a 1-km sea surface temperature analysis, and a 4-km greenness vegetation fraction analysis. Similar domains were established over the southeast Texas and Alabama coastlines, each with a 9 km outer grid spacing and a 3 km inner nest spacing. The model was run at each NWS office once per day out to 24 hours from 0600 UTC, using the NCEP Global Forecast System for initial and boundary conditions. Control runs without the NASA products were made at the NASA SPoRT Center. The NCAR Model Evaluation Tools verification package was used to evaluate both the forecast timing and location of the first initiates, with a focus on the impacts of the NASA products on the model forecasts. Select case studies will be presented to highlight the influence of the products.