

Jason Naylor  
University of North Dakota

Title: Simulations of the supercell outbreak of 18 March 1925

On 18 March 1925, the "Tri-State Tornado" left a path of nearly complete destruction across portions of Missouri, Illinois, and Indiana and killed 700 people - the deadliest tornado in U.S. history. Using the Weather Research and Forecasting Model (WRF), the Tornado Research Team at the Univ. of North Dakota in collaboration with scientists from the NOAA's Earth System Research Laboratory (ESRL) / Physical Sciences Division (PSD) and University of Colorado CIRES Climate Diagnostics Center are conducting storm-scale simulations of the event in an effort to understand the environmental conditions and environmental changes that led to the long-track tornadic supercell thunderstorm and overall severe weather outbreak. Upper-air reanalysis fields from the NOAA-CIRES 20th Century Reanalysis Project, an ensemble Kalman filter (EnKF)-based reanalysis using only surface pressure observations, are being used and are necessary since standard upper-air observations did not exist in 1925. We are initializing the WRF model with individual EnKF member analyses that compared most favorably against the meteorological observations at 18 UTC on 18 March. Preliminary results from these simulations will be presented.