

The Severe Downbursts of 12 April 2014

Ernest Ostuno and T.J. Turnage

NOAA / National Weather Service Grand Rapids, MI

On 12 April 2014 severe downbursts struck Lower Michigan with damage to trees and buildings. The event was not well anticipated and the severity of the event was not recognized until damage had begun. An analysis of the synoptic, mesoscale and storm scale features are shown along with high resolution model forecasts. The environment was characterized by favorable upper level dynamics provided by the right-entrance region of an anti-cyclonically curved jet streak, steep mid-level lapse rates, and 0 to 6 km shear values of 50 to 70 knots. These factors were enough to overcome meager instability. An elevated mixed layer was advected into Lower Michigan from the Great Plains, and this likely contributed to the unusual severity of the downbursts.