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The influence of precipitation on the strength of a tornadic vortex

Gregory J. Tripoli and Holly DeRose Hassenzahl

University of Wisconsin-Madison, Department of Atmospheric and Oceanic Sciences, 1225
W. Dayton Street, Madison, Wisconsin 53706 USA

This paper investigates the impact of precipitation on the strength of a numerically simulated supercell tornado. A realistic simulation of the tornadic vortex was achieved using the technique of vorticity recycling from turbulent flow. Once a strong vortex is achieved, assessments of the role of precipitation on funnel strength were possible. In this study, it is determined that the centrifugal accelerations produced by precipitation drag actually lower the nonhydrostatic pressure in the vortex increasing its strength.