

Tornado maintenance and demise in the Goshen County, Wyoming supercell of 5 June 2009 intercepted by VORTEX2

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While much attention has been given to the processes governing tornado formation, comparatively less attention has been devoted to the processes governing tornado demise. However, understanding possible controls on tornado longevity are important for more precise warnings. The 5 June 2009 intercept in Goshen County, Wyoming by the second Verification of the Origins of Rotation in Tornadoes Experiment (VORTEX2) armada provided high-quality observations of a long-lived (~30 minutes) tornado, allowing us to examine the changes in kinematic and thermodynamic fields over the full tornado lifetime. This talk focuses on the steady-state and demise periods (2212-2230 UTC). Dual-Doppler fields from the Doppler On Wheels (DOW) radars and the National Oceanic and Atmospheric Administration (NOAA) X-band polarized radar (NOXP) allow us to examine changes in near-surface fields, including the displacement of the near-surface rotation from the 2-km ARL mesocyclone, the evolution of small regions of enhanced vorticity along the rear-flank gust front and their interaction with the tornado, and changes in the rear-flank downdraft. Additionally, mobile mesonet and Stick Net data allow us to characterize surface buoyancy gradients in portions of the storm. Current conceptual models for tornadogenesis are extended to explain aspects of tornado maintenance and demise.