The DOW Network Pioneered the Mapping of Tornadoes Using Mobile Radars

1st Mobile Radar Mapping of Tornadoes
And Related Phenomena

- 3D Wind Structure
- Debris Clouds
- Vertical Cross-sections
- Multiple Vortices
- Multiple Wind Maxima, Anticyclonic Tornadoes
- Wind-Damage Relationships
- Subsidiary Non-Tornadic Vortices
- Integration With Surface Measurements

Tornado Climates

- Tornadoes have preferred intensity (December and No mean 1847)
- Tornadoes have preferred location (Goshen County, WY; 05 June 2009)

1st Mobile Radar Dual-Doppler Analysis
Measurement of Vorticity BudgetTerms
Secondary Gust Front and its Role in Genesis/Maintenance
Triggers for Tornadoogenesis
Supercell and Mesocyclone Evolution
Assimilation

1st Mobile Radar Climatology
Non-Case Study Analysis of Tornado Phenomena
170+ Tornadoes
Preferred Size, Preferred Intensity Revealed
Relationship between Tornado Intensity and 88D Intensity

Tornado Wind-Damage Relationship

- Potential impact of DOW measured tornadoes on index (Wurman et al. 2007)
- 3D Mapping of tornadoes, debris cloud vertical structure (Wurman et al. 2008)
- Tornadoes have preferred intensity (December and No mean 1847)

Tornado Genesis, Maintenance, and Supercell Studies

- Evolution of non-interactive-paired mesocyclones (Wurman et al. 2017)
- Role of secondary rear flank gust front in tornadic supercell genesis
- Evolution of non-interactive-paired mesocyclones (Wurman et al. 2005)

Tornado Structure

- DOW photogrammetry studies of tornado structure (Adler et al. 2013, Markowski et al. 2011)