

Research

Research projects and broadcast meteorology presentations, most of them delivered at regional and national weather conferences:

Recent work

- [Heat burst detection by a temporally fine-scale mesonet](#)

Case involves a 2007 heat burst recorded by mesonet sensors, data gathered in one minute increments. Published in the Electronic Journal of Operational Meteorology, National Weather Association, 2008-EJ1.

- [Operational difficulties associated with convective wet downbursts](#)

Review paper summarizing operational aspects of downburst winds in a convective environment.

South Dakota tornado outbreak of 24 June 2003

A national single-day, single-state record for tornado occurrences was set on the date, with 67 tornadoes in under six hours in eastern South Dakota.

- [Precursors and initiation of the outbreak](#)

Synoptic setup of the outbreak, including a trajectory analysis of the tornadogenetic air parcels.

- [Evolution of the outbreak](#)

Meteorological aspects of the outbreak, including cell mergers leading up to the F-4 Manchester tornado, and highly-anomalous tornado movement in the warm sector of the storm.

Spencer, SD tornado

- [Spencer tornado revisited](#)

Unpublished review of the tornado that killed six people and destroyed the town of Spencer on 30 May 1998.

Powerpoint presentations about these and other meteorological events can be viewed by scrolling through the powerpoint library.