

Curriculum Vitae for Dr. Louis J. Wicker

Updated 01/10/12

Present Position (June 1999 – present)

Research meteorologist specializing in severe storm dynamics, convective-scale data assimilation, computational physics and currently the chief scientist for the Warn on Forecast (WoF) program at the NOAA National Severe Storms Laboratory in Norman, Oklahoma.

Professional Activities

- Member of the scientific steering committee for the second Verification of the Origins of Rotation in Tornadoes Experiment (VORTEX2), 2007-2011.
- Adjunct Associate Professor, School of Meteorology, University of Oklahoma, Spring 2000 to present.
- CIMMS Fellow, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, May 1999 to present
- Associate Adjunct Professor, Department of Meteorology, Texas A&M University, June 1999 to 2005.
- Associate Professor, Texas A&M Meteorology Department, August 1998 through May 1999
- Assistant Professor, Texas A&M Meteorology Department, August 1992 through July 1998
- Visiting Associate Research Scientist, National Center for Supercomputer Applications and the Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign. August 1990 through August 1992.

Awards

- 1989: “Study of a Numerically Modeled Severe Storm” received the First Place Visualization Award at “The Computer Graphics Film Festival 1989” held in London, England and subsequently was submitted for an Academy Award.
- 2002: Office of Oceanic and Atmospheric Research Outstanding Scientific Paper Award for the review article “Numerical modeling of severe local storms”, by R. Wilhelmson and L. Wicker.

Refereed Publications

40. Potvin, C. K., L.J. Wicker, 2012: Comparisons of kinematic retrievals within a simulated supercell: EnKF radar data assimilation versus dual-Doppler analysis. To be submitted to *Mon. Wea. Rev.* 30 January 2012.
39. Tanamachi, R., L. Wicker, D. C. Dowell, H. B. Bluestein, and M. Xue, 2012: Assimilation of high-resolution, mobile Doppler radar data into EnKF analyses of the 4 May 2007 Greensburg, Kansas supercell storm. To be submitted to *Mon. Wea. Rev.* 30 January 2012.
38. Potvin, C. K., D. Betten, L.J. Wicker, M. I. Biggerstaff, 2012: Variational versus traditional dual-Doppler wind retrieval of a simulated supercell thunderstorm. To be submitted to *Mon. Wea. Rev.*, 20 January 2012.
37. Stensrud, D.J., L.J. Wicker, M. Xue, D. Dawson, N. Yussouf, D. Wheatley, T. A. Jones, C. Potvin, T. Lei, N. Snook, Y. Jung, M. C. Coniglio, E. Mansell, T. Thompson, T. Smith, K. Kuhlman and H. E. Brooks, 2012: Progress and Challenges with Warn-on-Forecast. *Atmospheric Research*. European Conference on Severe Storms Special Issue. Submitted as an invited paper on 13 January 2012.
36. Wurman, J., D.C. Dowell, Y. Richardson, P. Markowski, E. Rasmussen, D. Burgess, L.J. Wicker, and H.B. Bluestein, 2012: Verification of the Origins of Rotation in Tornadoes Experiment 2: VORTEX2: Submitted to *Bull. Amer. Meteor. Soc.* Submitted 15 December, 2011.
35. Crowell, S., L. White, and L. J. Wicker, 2012: Estimation of near surface wind speeds in strongly rotating flows. Submitted to *Applied Mathematics and Computation* 2 December 2011.
34. Potvin, C. K., L.J. Wicker, and A. Shapiro, 2012: Assessing dual-Doppler kinematical and dynamical retrieval errors in supercell thunderstorms using OSS experiments. Accepted with revisions to *J. Atmos. Ocea. Tech.*, Revised version submitted 10 January 2012.
33. Dawson II, Daniel T., L. Wicker, E. R. Mansell, and R. L. Tanamachi, 2012: Impact from the environmental wind profile on ensemble forecasts of the 4 May 2007 Greensburg tornado and its associated mesocyclones. *Mon. Wea. Rev.* Accepted July 27th, 2011. [DOI: 10.1175/MWR-D-11-00008.1](https://doi.org/10.1175/MWR-D-11-00008.1)
32. Skinner, P. S., C. C. Weiss, J. L. Schroeder, L. J. Wicker, and M. I. Biggerstaff, 2012: Observations of the surface boundary structure within the 23 May, 2007 Perryton, Texas supercell. *Mon. Wea. Rev.*, **139**, 3730–3749. [DOI: 10.1175/MWR-D-10-05078.1](https://doi.org/10.1175/MWR-D-10-05078.1)
31. Dowell, D. C., L. J. Wicker, C. Snyder, 2011: Ensemble Kalman filter assimilation of radar observations of the 8 May 2003 Oklahoma City supercell: Influences of reflectivity observations on storm-scale analyses. *Mon. Wea. Rev.*, **139**, 272–294. [DOI: 10.1175/2010MWR3438.1](https://doi.org/10.1175/2010MWR3438.1)
30. Wandishin, M., D. Stensrud, S. Mullen, and L. J. Wicker, 2010: On the predictability of mesoscale convective systems: Three-dimensional simulations. *Mon. Wea. Rev.*, **138**, 863-885. [DOI:](https://doi.org/10.1175/2009MWR3438.1)

[10.1175/2009MWR2961.1](https://doi.org/10.1175/2009MWR2961.1).

29. Stensrud, D., M. Xue, L. J. Wicker, K. E. Kelleher, M. P. Foster, J. T. Schaefer, R. S. Schneider, S. G. Benjamin, S. S. Weygandt, J. T. Ferree, and J. P. Tuell, 2009: Convective-scale Warn on Forecast: A Vision for 2020. *Bull. Amer. Meteor. Soc.*, **90**, 1487–1499, DOI: 10.1175/2009BAMS2795.1.
28. Wicker, L. J., 2009: A two-step Adams-Bashforth-Moulton split-explicit integrator for compressible atmospheric models. *Mon. Wea. Rev.*, **137**, 3588–3595. DOI: 10.1175/2009MWR2838.1
27. Crowell, S., D. Williams, C. Mavriplis, and L. Wicker, L., 2009: Comparison of Traditional and Novel Discretization Methods for Advection Models in Numerical Weather Prediction, G. Allen et al. (Eds.): ICCS 2009, Part II, Lecture Notes in Computational Science 5545, 263–272.
26. Dowell, D. C., and L. J. Wicker, 2009: Additive noise for storm-scale ensemble forecasting and data assimilation. *J. Atmos. Ocea. Tech.*, **26**, 911–927. DOI: 10.1175/2008JTECHA1156.1
25. French, M., H. B. Bluestein, D. C. Dowell, L. J. Wicker, M. R. Kramer, and A. L. Pazmany, 2009: An example of the use of mobile, Doppler radar data in tornado verification. *Weather and Forecasting*, **24**, 884–891. DOI: 10.1175/2008WAF2222147.1.
24. French, M., H. B. Bluestein, D. C. Dowell, L. J. Wicker, M. R. Kramer, and A. L. Pazmany, 2008: High-resolution, mobile, Doppler observations of cyclic mesocyclogenesis in a supercell. *Mon. Wea. Rev.*, **136**, 4997–5016. DOI: 10.1175/2008MWR2407.1.
23. Wandishin, M., D. Stensrud, S. Mullen, and L. J. Wicker, 2008: On the predictability of mesoscale convective systems: Two-dimensional simulations. *Weather and Forecasting*, **23**, 773–785. DOI: 10.1175/2008WAF2007057.1
22. Fierro, A. O, M. S. Gilmore, L. J. Wicker, E. R. Mansell, and J. M. Straka, 2006: Electrification and lightning in an idealized boundary-crossing supercell simulation of 2 June 1995. *Mon. Wea. Rev.*, **134**, 3149–3171.
21. Coniglio, M. C., D. J. Stensrud, and L. J. Wicker, 2006: Role of upper-level shear on the structure and maintenance of strong quasi-linear mesoscale convective systems. *J. Atmos. Sci.*, **63**, 1231–1252.
20. Biggerstaff, M. I., L. J. Wicker, J. Guynes, C. Ziegler, J. M. Straka, E. N. Rasmussen, A. Doggett IV, L. D. Carey, and J. L. Schroeder, 2005: The shared mobile atmospheric research and teaching (SMART) radar: A collaboration to enhance research and teaching. *Bull. Amer. Meteor. Soc.*, **86**, 1263–1274.
19. Dowell, D. C., C. R. Alexander, J. M. Wurman, and L. J. Wicker, 2005: Reflectivity patterns and wind-measurement errors in high-resolution radar observations of tornadoes. *Mon. Wea. Rev.*, **133**, 1501–1524.

18. Dowell, D. C., F. Zhang, L. J. Wicker, C. Snyder, and N. A. Crook, 2004: Wind and thermodynamic retrievals in the 17 May 1981 Arcadia, Oklahoma supercell: Ensemble Kalman filter experiments. *Mon. Wea. Rev.*, **132**, 1982-2005.
17. Peckham, Steven E., R. B. Wilhelmson, L. J. Wicker, and Conrad L. Ziegler, 2004: Numerical simulation of the interaction between the dryline and horizontal convective rolls. *Mon. Wea. Rev.*, **132**, 1792–1812.
16. Brooks, H., C. Doswell III, D. Dowell, R. Holle, B. Johns, D. Jorgensen, D. Schultz, D. Stensrud, S. Weiss, L. Wicker, and D. Zaras, 2003: Severe thunderstorms and tornadoes. *Handbook of Weather, Climate, and Water: Dynamics, Climate, Physical Meteorology, Weather Systems, and Measurements*. T. D. Potter and B. R. Colman, Eds., Wiley-Interscience, 575-619.
15. Gilmore, M. S., and L. J. Wicker, 2002: Influences of the local environment on supercell cloud-to-ground lightning, radar characteristics, and severe weather on 2 June 1995. *Mon. Wea. Rev.*, **130**, 2349-2372.
14. Wicker, L. J., and W. C. Skamarock, 2002: Time-splitting methods for elastic models using forward time schemes. *Mon. Wea. Rev.* **130**, 2088–2097.
13. Wilhelmson, R. B, and L. J. Wicker, 2002: Numerical modeling of severe storms. *Meteor. Monogr.* C. A. Doswell III, Ed., American Meteorological Society, 123-166.
12. Peckham, S. E. and L. J. Wicker, 2000: The influence of topography and lower-tropospheric winds on dryline evolution. *Mon. Wea. Rev.*, **128**, 2165-2189.
11. Atkins, N. T., M. L. Weisman, L. J. Wicker, 1999: The influence of preexisting boundaries on supercell evolution. *Mon. Wea. Rev.*, **127**, 2910–2927.
10. Wicker, L. J., and W. C. Skamarock, 1998: A time splitting scheme for the elastic equations incorporating second-order Runge-Kutta time differencing. *Mon. Wea. Rev.*, **126**, 1992–1999.
9. Gilmore, M., and L. J. Wicker, 1998: The influence of midtropospheric dryness on supercell morphology and evolution. *Mon. Wea. Rev.*, **126**, 943-958.
8. Wicker, L. J., M. P. Kay, and M. P. Foster, 1997: STORMTIPE-95: A convective storm forecast experiment. *Weather and Forecasting*, **12**, 427-436.
7. Perez, A., L. J. Wicker, and R. E. Orville, 1997: Characteristics of cloud-to-ground lightning associated with violent tornadoes. *Weather and Forecasting*, **12**, 401-410.
6. Nielsen-Gammon, J. W., M. I. Biggerstaff, M. E. Alcorn, D. Austin, K. B. Bowman, D. Djuric, J. Guynes, R. White, and L. J. Wicker, 1996: Texas A&M university's laboratory for the exploration of atmospheric processes - TAMU's LEAP. *Bull. Amer. Meteor. Soc.*, **77**, 2907-2918.

5. Wicker, L. J., and R. B. Wilhelmson, 1995: Simulation and analysis of tornado development and decay within a three-dimensional supercell thunderstorm. *J. Atmos. Sci.*, **52**, 2675-2703.
4. Wicker, L. J., and R. B. Wilhelmson, 1993: Numerical simulation of tornadogenesis within a supercell thunderstorm. *The tornado: Its structure, dynamics, prediction, and hazards*. AGU Monograph Series, C. R. Church (Ed.). **79**, 75-88.
3. H. E. Brooks, L. J. Wicker and C. A. Doswell III, 1993: STORMTIPE: A forecasting experiment using a three-dimensional cloud model. *Weather and Forecasting*, **8**, 352-362.
2. Straka, J. M., R. B. Wilhelmson, L. J. Wicker, J. A. Anderson, K. K. Droegemeier, 1993: Numerical solutions of a non-linear density current: A benchmark solution and comparisons. *International Journal of Numerical Methods in Fluids*, **17**, 1-22.
1. Wilhelmson, R. B., B. Jewett, C. Shaw, L. Wicker, M. Arrott, C. Bushnell, M. Bajuk, and J. Yost, 1990: A study of a numerically model severe storm. *International Journal of Supercomputing Applications*. **4, 2**. Video Edition, 20-36.

Recent Invited Talks

A Brief History of Convective Storm Research and Its Current Challenges, *Ogura Lecture*, University of Illinois Department of Atmospheric Sciences, April 2011.

VORTEX2 2009 & 2010: An overview and some of the early results. *Steamboat Weather Summit*, Steamboat Colorado, January 2011.

VORTEX2: Verification of the Origins of Rotation. *Norman Science Café*, May 2009

Improving Scientific Productivity using Python: An example from an Ensemble Data Assimilation System in Meteorology. *OU Supercomputing Symposium*, University of Oklahoma, October 2006.

Tornado Prediction: Has its time come? *Summer Advanced Study Program*, National Center for Atmospheric Research, Boulder Colorado, July 2006.

Severe Local Storms and Computational Science: What's Next? *Symposium on the Challenges of Severe Convective Storms*, American Meteorological Society Annual Meeting, Atlanta GA, January 2006.

The Role of Technology in Storm Science, Forecasts, and Warnings: the Past, Present, and a Possible Future, *Texas Severe Storm Association*, February 2005.

Numerical Modeling of Severe Storms, *Golden Jubilee Symposium on Tornado Forecasting*, University of Oklahoma, March 1998.

External Funding History

NSF: VORTEX2: Multiscale Analyses of Tornadic Storms Using Multiparameter Mobile Radar, Co-PI, (PI: Mike Biggerstaff), 2008-2011, \$902,000.

NSF: Development of C-band Mobile Polarimetric Radar, Co-PI, (PI: Mike Biggerstaff), 2007-2010, \$441,000 (with \$700,000 matching from NSSL and OU).

NSF: Collaborative Research: CMG: Adaptive High-Order Methods for Nonhydrostatic Numerical Weather Prediction, PI, 2005-2009 \$431,000.

NSF: Ensemble Kalman Filter Assimilation of Multisensor Observations from Convection for Storm-Scale Analysis, PI, 2003-2006 \$249,000.

NSF: Numerical and Observational Studies of Tornadic Supercells, PI, 1997-2000, \$351,000.

NSF: A Numerical Study of Parameters Controlling Tornado Longevity and Intensity in Supercells, PI, 1994-1997, \$305,000.

Major collaborations and students supervised

- (i) Co-founded the Shared Mobile Atmospheric Research and Teaching (SMART) radar program, beginning at TAMU with Dr. Biggerstaff (TAMU) and Conrad Zeigler (NSSL) in 1998 and continued on at NSSL through the completion of a polarized C-band radar as well as organizing the development of a mobile polarized X-band radar system. (1998-2010).
- (ii) *Current outside collaborators:* David Dowell (NOAA ESRL), William Skamarock (NCAR), Morris Weisman (NCAR), Michael Biggerstaff (OU), Howard Bluestein (OU), Xuguang Wang (OU), Jerry Straka (OU), Bob Wilhelmson (University of Illinois), Leigh Orf (C. Michigan), George Bryan (NCAR), Johannes Dahl (N.C. State).
- (iii) *Thesis advisor for completed TAMU students:* Ph.D. (2) Steven Peckham, Mathew Gilmore. M.S. (5) Anthony Perez, Mathew Gilmore, Louis Cantrell, Michael Kay, San-Ok Han.
- (iv) *Thesis advisor for completed OU students:* Ph.D. (1) Sean Crowell (co-advised, OU Mathematics), M.S. (4) Robert Carver, Alex Fierro, Dustin Williams, Tara Thompson. Total graduate students supervised through their degree: 3 doctoral students and 9 masters students.
- (v) *Thesis advisor current:* Ph.D. (1) Tara Thompson (currently co-advisor with Dr. Wang).
- (vi) *Post-doctoral researchers supervised:* (2) Dr. Daniel Dawson (2009-2011), Dr. Corey Potvin, (2010-2012).

Synergistic Activities

- (i) Service at the Department of Atmospheric Sciences at Texas A&M University: Graduate Studies Committee (member 1993-1996), Undergraduate Advisor (1994-1999), Departmental

Infrastructure Committee (1993-1999, chair for 1996-), Member of University Committee for Supercomputing (1993-1999), taught courses in atmospheric dynamics and modeling at both graduate and undergraduate levels, courses included, Special Topics in Non-hydrostatic Modeling, Quantitative Methods for the Atmospheric Sciences, Dynamic Meteorology, Introduction to Atmospheric Science, Convection. Developed the Quantitative Methods and Convection courses. Chaired 8 Ph.D. and M.S. committees, also served on another 13 graduate student committees while at TAMU.

- (ii) Professional Service: Member of the Severe Local Storms Committee for the American Meteorological Society 1993-1995, Co-Chaired the AMS 18th Conference on Severe Local Storms held in San Francisco CA, Feb. 1996, Member of the NCSA/Pittsburgh NSF Supercomputing Peer Review Allocation Committee, 1993 –1994. Participated with the NSF field experiment on the Verification of the Origins of Rotation in Tornadoes EXperiment (VORTEX) conducted during the springs of 1994-1995.
- (iii) Community Service: More than 2 dozen talks given to area public schools on severe storms and severe storm safety, over 40 interviews given to local, regional and national media on severe storms and tornadoes
- (iv) Other Activities: Invited visiting scientist at the Mesoscale and Microscale Meteorology division of the National Center for Atmospheric Research in Boulder, Colorado. Summer 1993-1998, invited visiting scientist to the German Meteorological Institute (DWD, Frankfurt) in October 1997.

Education

- Ph.D. in Atmospheric Sciences
University of Illinois, August 1990
"A Numerical Study of a Tornado-Scale Vortex in a Three-Dimensional Cloud Model"
Dissertation Advisor: Dr. Robert Wilhelmson
- M.S. in Meteorology
University of Oklahoma, June 1986
"A Simulation Study of a Data Assimilation Scheme Designed for VAS Temperature Soundings"
Thesis Advisor: Dr. Tzvi Gal-Chen
- B.S. in Meteorology
University of Oklahoma, December 1984

Conference Abstracts and other Publications

1. Thompson, T. E., M. I. Biggerstaff, L. J. Wicker, D. P. Betten, C. L. Ziegler and M. R. Kumjian, 2010: Highlights of the storm-scale radar data from VORTEX2—2010. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **P6.2**.

2. Thompson, T. E., L. J. Wicker, P. L. Heinselman and C. L. Ziegler, 2010: EnKF analyses of two tornadic supercells using rapid-scan phased array radar data. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **12B.6**.
3. Wicker, L. J., E. R. Mansell, D. C. Dowell and D. T. Dawson, 2010: High-resolution storm-scale numerical weather prediction using EnKF for the 8 May 2003 Moore Oklahoma tornadic supercell. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **12B.5**.
4. Biggerstaff, M. I., D. P. Betten, C. L. Ziegler, D. R. MacGorman, L. J. Wicker, D. W. Burgess and E. R. Mansell, 2010: Rear-flank downdraft dynamics in tornadic and non-tornadic supercell thunderstorms. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **8A.1**.
5. Betten, D. P., M. I. Biggerstaff, C. Ziegler, K. M. Kuhlman, D. R. MacGorman and L. J. Wicker, 2010: Observational analysis of cyclic mesocyclogenesis during VORTEX2. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **7A.3**.
6. Wurman, J., L. J. Wicker, Y. P. Richardson, E. N. Rasmussen, P. M. Markowski, D. Dowell, D. W. Burgess and H. B. Bluestein 2010: An overview of the VORTEX2 field campaign. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **5.1**.
7. Tanamachi, R. L. D. C. Dowell, L. J. Wicker, H. B. Bluestein, S. J. Frasier, K. Hardwick and S. Crowell, 2010: Impact of initial environmental velocity profiles on numerical-model-based storm-scale analyses of the 4 May 2007 Greensburg, Kansas cyclic tornadic thunderstorm. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **3A.6**.
8. Crowell, S., L. J. Wicker and L. W. White 2010: Estimation of Low-Level Wind Structures in a Tornado-like Vortex, *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **4A.4**.
9. Marsh, P.T., K. Scharfenberg, K. Kelleher, M. C. Coniglio, L. J. Wicker, J. Purpura, M. Hudson and S. R. Cobb, 2010: VORTEX 2 operations center: Bridging the gap between research and operations. *Preprints, 25th Conf. on Severe Local Storms*, Denver CO, Amer. Meteor. Soc., Paper **P6.5**.
10. Thompson, T., L. Wicker, M. Biggerstaff, D. Forsyth 2008: EnKF Analysis of the 29 May 2004 Oklahoma City Supercell using Rapid-Scan Phased Array Radar Data. *Preprints, 5th European Conference on Severe Storms*. Landshut, Germany, pp 169-170. <http://www.essl.org/ECSS/2009/preprints/O06-6-thompson.pdf>
11. Ziegler, C., L. Wicker, M. Biggerstaff, D. Betten, E. Mansell, K. Kulman, D. MacGorman 2009: Evolution of Downdraft thermodynamics and low-level rotation in the 29 May 2004 Geary, OK USA Supercell Storm. *Preprints, 5th European Conference on Severe Storms*. Landshut, Germany, pp 29-30. <http://www.essl.org/ECSS/2009/preprints/O02-6-ziegler.pdf>

12. Bluestein, H., D. Burgess, D. Dowell, P. Markowski, E. Rasmussen, Y. Richardson, L. Wicker, and J. Wurman, 2009: VORTEX2: The Second Verification of the Origins of Rotation in Tornadoes Experiment. *Preprints, 5th European Conference on Severe Storms*. Landshut, Germany, pp 275-276. <http://www.essl.org/ECSS/2009/preprints/O09-06-bluestein.pdf>
13. Wicker, L. J., 2008: The Role of Near-Surface Wind Shear on Low-Level Mesocyclone Generation and Tornadoes: Renascentia. *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc. Paper 15.1.
14. Orf, L., M. S. Gilmore, J. M. Straka, R. B. Wilhelmson, L. J. Wicker, and E. N. Rasmussen, 2008: Descending Reflectivity Cores in a simulated supercell. Paper **14.2**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
15. Mansell, E. R., L. J. Wicker, 2008: EnKF analysis and forecast predictability of a tornadic supercell Storm. Poster **5.2**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
16. Biggerstaff, M. I., D. W. Burgess, G. D. Carrie, E. R. Mansell, L. J. Wicker, and C. L. Ziegler, 2008: Storm-scale sampling strategies for the mobile C-band Doppler radars during VORTEX2. Paper **5.2**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
17. Thompson, T., L. Wicker, K. Kuhlman, M. Biggerstaff, 2008: Comparison of Three-dimensional Winds Derived from Assimilated Phased Array Radar Data with Mobile Dual-Doppler Analyses from a Tornadic Storm. Paper **2.3**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
18. Ziegler C., K. Kuhlman, M. Biggerstaff, D. Betten, L. Wicker, E. Mansell, and D. MacGorman, 2008: Evolution of low-level rotation in the tornadic 29 May 2004 Geary, Oklahoma supercell storm. *Abstract submitted to the 24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc
19. French, M., H. B. Bluestein, D. C. Dowell, L. J. Wicker, M. R. Kramar, and A. L. Pazmany, 2008: High-resolution, mobile Doppler radar observations of cyclic mesocyclogenesis in a supercell. Paper **19.1**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
20. Tanamachi, R., L. J. Wicker, D. C. Dowell, H. B. Bluestein, S. Frasier, K. Hardwick, 2008: X-band, mobile Doppler radar data collected in a tornadic thunderstorm: Data assimilation experiments. Paper **2.6**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc.
21. Wandishin, M. D. J. Stensrud, L. J. Wicker, and S. L. Mullen 2008: Predictability of mesoscale convective systems in two- and three-dimensional models. . Paper **11.4**, *24th Conf. on Severe Local Storms*, Savannah GA, Amer. Meteor. Soc
22. Coniglio, M. C., D. C. Dowell, L. J. Wicker, 2007: Ensemble Kalman filter assimilation of Doppler radar data: Analyses of a developing MCS. Paper **3B.2**, *22nd Conference on Weather*

Analysis and Forecasting/18th Conference on Numerical Weather Prediction, Park City, UT, USA, American Meteorological Society, <http://ams.confex.com/ams/pdfpapers/124285.pdf>

23. St-Cyr, A., C. Mavriplis, and L. Wicker, 2007: Jacobian-free rosenbrock time-stepping for compressible geophysical flows. *International Conference on Computational Science*. Beijing, China. May 27-30.
24. Mavriplis, C., and L. Wicker, 2007: Towards an adaptive discontinuous galerkin method for mesoscale modeling. *SIAM Conference on High Resolution Modeling in the Geosciences*. Santa Fe, NM March 22-24.
25. French, M. M., H. B. Bluestein, D. C. Dowell, L. J. Wicker, M. R. Kramer, and A. L. Pazmany, 2005: The 15 May 2003 Shamrock, Texas, supercell: A dual-Doppler analysis and EnKF data-assimilation experiment. Paper **10R.2**, *Preprints, 11th Conf. On Mesoscale Processes*. Albuquerque, NM. Amer. Meteor. Soc.
26. Coniglio, M. C., D. C. Dowell, L. J. Wicker, and D. J. Stensrud, 2005: Impact of Doppler radar and mesoscale surface observations on the storm-scale analysis and prediction of a mesoscale convective system. Paper **JP1J.2**, *Preprints, 11th Conf. On Mesoscale Processes*. Albuquerque, NM. Amer. Meteor. Soc.
27. Weiss, S., J. Kain, L. Wicker, B. Davies-Jones, D. Bright, J. Levit, G. Carbin, M. Baldwin, 2005: Evaluating the skill of daily explicit predictions of mesocyclones in multiple high-resolution WRF model forecasts during the 2005 SPC/NSSL Spring Program. Paper **2M.2**, *Preprints, 11th Conf. On Mesoscale Processes*. Albuquerque, NM. Amer. Meteor. Soc.
28. Burgess, D. W., D. C. Dowell, L. J. Wicker, and A. Witt, 2005: Detailed comparison of observed and modeled tornadogenesis. Paper **10.4**, *Preprints, 32nd Conf. On Radar Meteorology*. Albuquerque, NM. Amer. Meteor. Soc.
29. Gilmore, M., R. Patterson, G. Romine, L. J. Wicker, R. B. Wilhelmson, Al. Betts, D. Cox, L. Cronce, M. Hall, L. Leonard, S. Levy, and M. A. Straka., 2004: Behind the "supertwister": experiences in science education at NCSA. Paper **P6.5**, *Preprints, 22nd Conf. on Severe Local Storms*, Hyannis, MA, Amer. Meteor. Soc.
30. Wicker, L. J., and D. C. Dowell, 2004: High-resolution analyses of the 8 May 2003 Oklahoma City storm. Part III: An ultra-high resolution forecast experiment. Paper **12.6**, *Preprints, 22nd Conf. on Severe Local Storms*, Hyannis, MA, Amer. Meteor. Soc.
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