

Curriculum Vitae

Name: Jason E. Nachamkin, Ph. D.

Position: Research Scientist
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Education

1998 Ph.D. (Atmospheric Science), Colorado State University
1992 M.S. (Atmospheric Science), Colorado State University
1989 B.S. (Meteorology), The Pennsylvania State University

Professional Employment and Experience

1999-Present **Research Scientist**, Marine Meteorology Division, Naval Research Laboratory, Monterey, CA. Developed advanced event-based composite verification system for operational wind and precipitation evaluation. Developed multiple diagnostic tools for mesoscale numerical model developers, including traditional scores (RMS, bias, etc) as well as advanced cloud verification, dispersion verification, ensemble verification, and database techniques. Actively worked with Fleet Numerical Meteorology Oceanography Center (FNMOC) to evaluate numerical forecasts from multiple areas around the globe. Gave user training briefs to students at the Naval Postgraduate School. Currently developing and validating a surface analysis package for the NRL Atmospheric Variational Data Assimilation System (NAVDAS).

1998-1999 **Postdoctoral Scholar**, Dept. of Atmospheric Science, Colorado State University, Fort, Collins, CO. Installed and ran the Regional Atmospheric Modeling System (RAMS). Worked closely with National Weather Service Personnel in Cheyenne, WY, Grand Junction, CO, and Pueblo, CO to develop forecast products and study pertinent meteorological events.

1989-1997 **Graduate Research Assistant**, Dept. of Atmospheric Science, Colorado State University, Fort Collins, CO. Investigated thermally and convectively generated circulations over the Colorado Rockies and adjacent plains. Conducted high-resolution (1.6 km) simulations of real-world convective storms and validated results against three-dimensional dual Doppler winds.

Research Interests

Verification and evaluation
User education and training
Mesoscale modeling
Convective storm dynamics

Membership in Technical Societies and Organizations

Sigma Xi Scientific Research Society

American Meteorological Society.
Chi Epsilon Pi National Meteorological Honor Society.

Field Program Experience

1992-1994 Colorado State University-CHILL radar student grant to study mesoscale convective systems
1995 Complex Layered Cloud Experiment

Formal Recognition

NRL Review Award 2016
Citizen Watershed Monitoring Network Volunteer of the Year 2007.
Colorado State University Special Merit Fellowship 1989-1990.
Hans A. Panofsky Scholarship 1988.
John and Elizabeth Holms Teas Scholarship 1986, 1987, 1988.
Bayard D. and Ethel M. Kunkle Scholarship 1986.

Peer-Reviewed Publications

Nachamkin, J. and Y. Jin, 2017: An Eulerian framework for event-based pattern verification, *Wea. Forecasting* **32**, 2027-2043.

Flagg, D., J. D. Doyle, T. R. Holt, D. P. Tyndall, C. M. Amerault, D. Geiszler, T. Haack, J. Nachamkin, and D. P. Eleuterio, 2018: On the impact of unmanned aerial system observations on numerical weather prediction. *Mon. Wea. Rev* 599-622

Nachamkin, J, Y. Jin, L. Grasso, and K. Richardson, 2017: Using synthetic brightness temperatures to address uncertainties in cloud top height verification. *J. Appl. Meteor. Climatol.* **56**, 283-296.

Nachamkin, J. and J. Schmidt; 2015: Applying a neighborhood fractions sampling approach as a diagnostic tool. **143** *Mon. Wea. Rev.*,p 4736-4749.

Jin, Y., S. Wang, J. E. Nachamkin, J. D. Doyle, G. Thompson, L. Grasso, T. Holt, J. Moskaitis, H. Jin, R. M. Hodur, Q Zhao, M. Liu, M. DeMaria 2014: The Impact of Ice Phase Cloud Parameterizations on Tropical Cyclone Prediction, *Mon. Wea. Rev.* **142**, 606-625.

Nachamkin, J. E., 2009: Application of the composite method to the spatial forecast verification methods inter-comparison dataset. *Wea. Forecasting*, **24**, 1390-1400.

Nachamkin, J. E., J. Schmidt, and C. Mitrescu 2009: Verification of Cloud Forecasts over the Eastern Pacific Using Passive Satellite Retrievals. *Mon. Wea. Rev.*, **137**, 3485-3500.

- Bishop, C. H., T. R. Holt, J. E. Nachamkin, S. Chen, J. Mclay, J. D. Doyle, and W. T. Thompson 2009: Regional ensemble forecasts using the ensemble transform technique. *Mon. Wea. Rev.*, **137**, 288-298.
- Liu, M., J. E. Nachamkin, D. L. Westphal 2009: On the improvement of COAMPS weather forecasts using an advanced radiative transfer model. *Wea. Forecasting*, **24**, 286-306.
- Nachamkin, J. E., J. Cook, M. Frost, D. Martinez, G. Sprung 2007: Evaluation of dispersion forecasts driven by atmospheric model output at coarse and fine resolution. *Jou. Appl. Meteor.* **46**, 1967-1980.
- Nachamkin, J. E., S. Chen, and J. S. Schmidt 2005: Evaluation of heavy precipitation forecasts using composite-based methods: A distributions-oriented approach. *Mon. Wea. Rev.*, **133**, 2163-2177.
- Nachamkin, J. E., 2004: Mesoscale verification using meteorological composites. *Mon. Wea. Rev.*, **132**, 941-955.
- Nagata, M., L. Leslie, Y. Kurihara, R. L. Elsberry, M. Yamasaki, H. Kamahori, R. Abbey, K. Bessho, J. Calvo, JCL., Chan, P. Clark, M. Desgagne, S-Y. Hong, D. Majewski, P. Malguzzi, J. McGregor, H. Mino, A. Murata, J. Nachamkin, M. Roch, C. Wilson, 2001: Third COMPARE Workshop: A model Intercomparison experiment of tropical cyclone intensity and track prediction. *Bull. Amer. Meteor. Soc.*, **82**, 2007-2020.
- Bernardet, L. R., L. D. Grasso, J. E. Nachamkin, C. A. Finley, W. R. Cotton, 2000: Simulating convective events using a high-resolution mesoscale model. *J. Geophys. Res.*, **105**, 14963-14982.
- Nachamkin, J. E., R. L. McAnelly, and W. R. Cotton, 2000: Interactions between a developing mesoscale convective system and its environment. Part I: Observational analysis. *Mon. Wea. Rev.*, **128**, 1205-1224.
- Nachamkin, J. E., and W. R. Cotton, 2000: Interactions between a developing mesoscale convective system and its environment. Part II: Numerical Simulation. *Mon. Wea. Rev.*, **128**, 1225-1244.
- McAnelly, R. L., J. E. Nachamkin, W. R. Cotton, and M. E. Micholls, 1997: Upscale evolution of MCSs: Doppler radar analysis and analytical investigation. *Mon. Wea. Rev.*, **125**, 1083-1110.
- Pielke R. A., L. R. Bernardet, P. J. Fitzpatrick, R. F. Hertenstein, A. S. Jones, X. Lin, J. E. Nachamkin, U. S. Nair, G. S. Poulos, M. H. Savoie, and P. L. Vidale, 1995: Standardized test to evaluate numerical weather prediction algorithms. *Bull. Amer. Meteor. Soc.* **76**, 46-48.
- Nachamkin, J. E., R. L. McAnelly, and W. R. Cotton, 1994: Observational analysis of a developing mesoscale convective complex. *Mon. Wea. Rev.*, **122**, 1168-1188.

Submitted Manuscripts

Conference Papers and Presentations

- Nachamkin, J. E., J. M. Schmidt, C. Mitrescu, 2009: Verification of mesoscale cloud forecasts utilizing composite and fuzzy techniques. *23rd Conference on Weather Analysis and Forecasting/19th Conference on Numerical Weather Prediction*, Amer. Meteor. Soc. Omaha, Nebraska, CD-ROM.
- Nachamkin, J. E., J. M. Schmidt, C. Mitrescu, S. D. Miller, 2007: Verification of global and mesoscale cloud forecasts over the eastern Pacific, *22nd Conference on Weather Analysis and Forecasting/18th Conference on Numerical Weather Prediction*, Amer. Meteor. Soc., Park City, UT, CD-ROM.
- Nachamkin, J. E., J. Cook, M. Frost, D. Martinez, G. Sprung, 2006: Lagrangian and Eulerian evaluation of atmospheric model forecasts for dispersion applications. *10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling*, George Mason University, Fairfax, VA.
- Nachamkin, J. E., J. Cook, M. Frost, D. Martinez, G. Sprung, 2005: Investigating the use of high-resolution mesoscale model forecasts as input for a dispersion model. *Battlespace Atmospheric and Cloud Impacts on Military Operations Conference*, Monterey, CA.
- Nachamkin, J. E., J. Cook, M. Frost, D. Martinez, G. Sprung, 2005: Verification of high resolution mesoscale model forecasts for use as dispersion model input. *9th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling*, George Mason University, Fairfax, VA.
- Nachamkin, J. E., and F. J. Turk, 2004: Verifying precipitation events using composite statistics. *2nd Workshop of the International Precipitation Working Group*, Monterey, CA.
- Nachamkin, J. E., 2004: Composite-based verification of warm-season precipitation forecasts from a mesoscale model, *International Verification Methods Workshop*, Montreal, Canada.
- Nachamkin, J. E., 2004: Investigation of general statistics from the Navy operational models. *COAPMS Users Workshop*, Monterey, CA.
- Nachamkin, J. E., S. Chen, J. M. Schmidt, 2004: Composite-based verification of precipitation forecasts from a mesoscale model. *Preprints, 20th Conference on Weather Analysis and Forecasting*, Amer. Meteor. Soc., Seattle, WA, CD-ROM.
- Chen, S., T. R. Holt, and J.E. Nachamkin, 2003: Sensitivity of the Soil Moisture Initialization to the Prediction of Cloud and Precipitation in the Coupled Ocean/Atmosphere Prediction System (COAMPSTM), *BACIMO Conference*, Monterey CA.

- Nachamkin, J. E., J. Schmidt, C. Liou, and S. Chen, 2003: Evaluation of improvements in moist processes in the Coupled Ocean Atmosphere Modeling System (COAMPSTM). Preprints, *Tenth Conference on Mesoscale Processes*, Portland, OR, Amer. Meteor. Soc., CD-ROM P1.25.
- Chen, S., J. E. Nachamkin, J. Schmidt, and C. S. Liou, 2002: Quantitative precipitation forecast for the Coupled Ocean/Atmosphere Mesoscale Prediction System (COAMPS). Preprints, *19th Conference on Weather Analysis and Forecasting*, San Antonio, TX, 202-205.
- Chen, S., J. Schmidt, and J. E. Nachamkin, 2002: Improved terrain analysis for the Coupled Ocean/Atmosphere Mesoscale Prediction System (COAMPS) and its impact to the forecast performance. Preprints, *19th Conference on Weather Analysis and Forecasting*, San Antonio, TX, 66-67.
- Nachamkin, J. E., 2002: Forecast verification using meteorological event composites. Preprints, *19th Conference on Weather Analysis and Forecasting*, San Antonio, TX, 206-209.
- Nachamkin, J. E., 2002: Event-based mesoscale verification using meteorological composites. *Verification Workshop: Making Verification More Meaningful*, Boulder, CO.
- Nachamkin, J. E., 2001: Event-based verification of mesoscale model wind forecasts using SSM/I. Preprints, *18th Conference on Weather Analysis and Forecasting*, Fort Lauderdale, FL, J43-J46.
- Nachamkin, J. E., and R. M. Hodur, 2001: Sensitivity of short-term forecasts from the Navy COAMPS to grid configuration and data assimilation. Preprints, *18th Conference on Weather Analysis and Forecasting*, Fort Lauderdale, FL, 77-80.
- Nachamkin, J. E. and R. M. Hodur, 2000: Verification of short-term forecasts from the Navy COAMPS over the Mediterranean. Preprints, *15th Conference on Probability and Statistics in the Atmospheric Sciences*, Asheville, NC, 54-57.
- Nachamkin, J. E., R. L. McAnelly, M. Weiland, K. Daugherty, D. Copley, and W. R. Cotton, 1999: Predictability and structure of an intense orographic snowfall event in eastern Wyoming. Preprints, *8th Conference on Mesoscale Processes*, Boulder, CO, 357-360.
- Meyers, M. P., J. Edwards, J. Snook, D. Wesley, J. E. Nachamkin, W. R. Cotton, P. Manousos, and P. Wolyn, 1998: Mesoscale forecast model (RAMS) applications in a Weather Service office viewed locally on a N-AWIPS platform. Preprints, *12th Conference on Numerical Weather Prediction*, Phoenix, AZ.
- Meyers, M. P. E. Holloway, C. Peterson, J. E. Nachamkin, J. Edwards, and W. R. Cotton, 1998: Operational application of a mesoscale model for quantitative precipitation forecasts over complex terrain. Preprints, *8th Conference on Mountain Meteorology*, Flagstaff, AZ.

Nachamkin, J. E., 1996: Numerical Simulation of the growth of a High Plains MCS. *Preprints, Seventh Conference on Mesoscale Processes*, Reading, UK, 468-470.

Nachamkin, J. E., R. L. McAnelly, and W. R. Cotton, 1995: Analysis of a developing MCS using pressure retrievals from the CSU-CHILL and Mile High Doppler radars. *Preprints, 27th International Conference on Radar Meteorology*, Vail, CO, 817-819.

Nachamkin, J. E., W. R. Cotton, and R. L. McAnelly, 1994: Analysis of the early growth stages of a high-plains MCS. *Preprints, Sixth Conference on Mesoscale Processes*, Portland, OR, 603-606.

McAnelly, R. L., J. E. Nachamkin, and W. R. Cotton, 1993: Upscale growth processes in a mesoscale convective system. *Preprints, 26th International Conference on Radar Meteorology*, Norman, OK, 94-96.

Nachamkin, J. E., R. L. McAnelly, and W. R. Cotton, 1992: Dual Doppler analysis of a developing wake low in the MCC of 3 June 1985 in PRE-STORM. *Preprints, Fifth Conference on Mesoscale Processes*, Atlanta, GA, 358-362.

Theses and Dissertations

Nachamkin, J. E., 1998: Observational and numerical Analysis of the genesis of a mesoscale convective system. Ph. D. dissertation, Paper no. 643, Dept. of Atmospheric Science, Colorado State University, Fort Collins, CO.

Nachamkin, J. E., 1993: The upscale evolution of a midlatitude mesoscale convective complex. M.S. thesis, paper no. 498, Dept. of Atmospheric Science, Colorado State University, Fort Collins, CO.

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