

Eric Gilleland

National Center for Atmospheric Research
PO Box 3000, Boulder, CO 80307-3000
EricG @ ucar.edu (email)
<http://www.ral.ucar.edu/staff/ericg> (web)
303 497-2849 (voice) 303 497-8386 (fax)

Research interests include applied spatial and extreme value statistics, as well as forecast verification methodology.

Personal Preparation

Ph.D., 2005, Statistics, Colorado State University, Fort Collins, Colorado
M.S., 1998, Statistics, Arizona State University, Tempe, Arizona
B.A., 1996, Mathematics, University of Colorado, Boulder, Colorado

Appointments

12/03/2002–Present: Project Scientist I (10/30/2006–Present), Associate Scientist III (6/1/2006–10/30/2006), Associate Scientist II (12/03/2002–6/1/2006), Research Applications Laboratory, National Center for Atmospheric Research.
10/19/1998–12/03/2002: Student Assistant III/Graduate Research Assistant, Geophysical Statistics Project/Atmospheric Technology Division, National Center for Atmospheric Research.

Selected Publications

Refereed

- Gilleland, E., 2011: Spatial forecast verification: Baddeley's Delta metric applied to the ICP test cases, *Wea. Forecasting*, **26** (3), 409–415.
- Gilleland, E. and Katz, R.W., 2011: New software to analyze how extremes change over time. *Eos*, 11 January, 92 (2), 13–14.
- de Oliveira, M.M.F., N.F.F. Ebecken, J.L.F. de Oliveira and E. Gilleland, 2011: Generalized extreme wind speed distributions in South America over the Atlantic Ocean region, *Theor. Appl. Climatol.*, **104**, (3–4), 377–385, DOI 10.1007/s00704-010-0350-3.
- Gilleland, E., D.A. Ahijevych, B.G. Brown and E.E. Ebert, 2010: Verifying Forecasts Spatially. *Bull. Amer. Meteor. Soc.*, October, 1365–1373.
- Gilleland, E., J. Lindström, and F. Lindgren, 2010. Analyzing the image warp forecast verification method on precipitation fields from the ICP. *Wea. Forecasting*, **25** (4), 1249–1262.
- Heaton, M.J., M. Katzfuss, S. Ramachandar, K. Pedings, E. Gilleland, E. Mannshardt-Shamseldin, and R.L. Smith, 2010: Spatio-Temporal Models for Large-scale Indicators of Extreme Weather. *Environmetrics*, **22**, 294–303.

- Towler, E., B. Rajagopalan, E. Gilleland, R.S. Summers, D. Yates, and R.W. Katz, 2010: Modeling hydrologic and water quality extremes in a changing climate. Accepted to *Water Resources Research*.
- Abeyirigunawardena DS, E Gilleland, D Bronaugh, 2009. Extreme wind regime responses to climate variability and change in the inner-south-coast of British Columbia Canada. *Atmosphere-Ocean*, **47**(1), 41–61.
- Ahijevych, D., E. Gilleland, B.G. Brown, and E.E. Ebert, 2009. Application of spatial verification methods to idealized and NWP gridded precipitation forecasts. *Wea. Forecasting*, **24**(6), 1485–1497.
- Gilleland, E., D. Ahijevych, B.G. Brown, B. Casati, and E.E. Ebert, 2009. Intercomparison of Spatial Forecast Verification Methods. *Wea. Forecasting*, **24**, 1416–1430.
- Gilleland E, TCM Lee, J Halley Gotway, RG Bullock, and BG Brown, 2008. Computationally efficient spatial forecast verification using Baddeleys image metric. *Mon. Wea. Rev.* **136**(5), 1747–1757.
- Gilleland E and TL Fowler, 2006. Network design for verification of ceiling and visibility forecasts. *Environmetrics*, **17**(6), 575–589.
- Stephenson A and E Gilleland, 2005. Software for the Analysis of Extreme Events: The Current State and Future Directions. *Extremes*, **8**, 87–109.
- Gilleland E and D Nychka, 2005. Statistical Models for Monitoring and Regulating Ground-level Ozone. *Environmetrics*, **16**, 535–546.

Other Selected Publications

- Gilleland, E., L. Chen, M. DePersio, G. Do, K. Eilertson, Y. Jin, E.L. Kang, F. Lindgren, J. Lindstrm, R.L. Smith, and C. Xia, 2011. Spatial Forecast Verification: Image Warping. NCAR Technical Note, TN-482+STR, 23pp.
- Gilleland E, 2010. Confidence intervals for forecast verification. *NCAR Technical Notes*, NCAR/TN-479+STR, ISSN Print Edition 2153-2397, ISSN Electronic Edition 2153-2400, 19 February 2010.
- Gilleland E, D Nychka, and U Schneider, 2006. Spatial models for the distribution of extremes. In *Hierarchical modelling for the environmental sciences: Statistical methods and applications*, Edts. JS Clark and A Gelfand. Oxford University Press, New York pp.170–183. ISBN 0-19-8569671.
- Gilleland E and RW Katz. Analyzing seasonal to interannual extreme weather and climate variability with the extremes toolkit (extRemes). 18th Conference on Climate Variability and Change, 86th American Meteorological Society (AMS) Annual Meeting, 29 January - 2 February, 2006, Atlanta, Georgia. P2.15.
Available at: <http://www.isse.ucar.edu/extremevalues/Gilleland2006.pdf>

Synergistic Activities

Organizing committee for the 2011 ASP Colloquium on “Statistical Assessment of Extreme Weather Phenomena under Climate Change.”

(<http://www.asp.ucar.edu/colloquium/2011/index.php>)

Problem presenter for the 2009 and 2010 Industrial Mathematical and Statistical Modeling Workshops for Graduate Students. Center for Research in Scientific Computation, Raleigh, North Carolina and the Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, North Carolina, 19–27 July 2010 and 20–28 July 2009. The 2009 topic was “Large-scale indicators for severe weather,” and the 2010 topic was “Space-time forecast verification: generalizing the image warp method from the spatial domain to the space-time domain.” The 2009 workshop resulted in the paper publication: Heaton, M.J., M. Katzfuß, S. Ramachandar, K. Pedings, E. Gilleland, E. Mannshardt-Shamseldin, and R.L. Smith, 2010: Spatio-Temporal Models for Large-scale Indicators of Extreme Weather. Accepted to *Environmetrics*.

Lead organizer of the Spatial Forecast Verification Methods Inter-Comparison Project (ICP, <http://www.ral.ucar.edu/projects/icp/>).

Organizing Chair for the 4th Annual UCAR/NCAR Early Career Scientists Assembly (ECSA) Junior Faculty Forum on Future Scientific Directions, 1-3 August 2006, Boulder, CO.

Gave two short courses on Extreme Value Analysis (March and June, 2009).

Organizer of two reading groups: One on extreme value statistics

(<http://www.ral.ucar.edu/staff/ericg/extremereading.html>), the other on forecast verification (<http://www.ral.ucar.edu/staff/ericg/vxreading.html>).

Member of American Geophysical Union (AGU), American Meteorological Society (AMS), American Statistical Association (ASA), and The International Environmetrics Society (TIES).