雷荔傈

Curriculum Vitae

Lili Lei

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Education

2011	Ph.D. Pennsylvania State University, Meteorology
2006	M.S. Nanjing University, Meteorology
2004	B.S. Nanjing University, Atmospheric Sciences

Professional Experience

2016/03-present	Nanjing University
2014-2016	Research Scientist, CIRES Climate Diagnostics Center, University of Colorado, and Physical Sciences Division, NOAA/Earth System Research Laboratory
2011-2014	Postdoctoral Fellow, Advanced Study Program, National Center for Atmospheric Research
2006-2011	Graduate Research Assistant, Pennsylvania State University, Department of Meteorology

Meteorology Courses

Dynamic Meteorology

Data Assimilation

Research Interests

(1) Data assimilation, particularly ensemble-based techniques;

(2) Numerical weather prediction and climate modeling;

(3) Atmospheric predictability.

Journal Publications

- Peng, Z., L. Lei, Z. Liu, J. Sun, A. Ding, J. Ban, D. Chen, X. Kou, and K. Chu, 2018: The impact of multi-species surface chemical observations assimilation on the air quality forecasts in China. *Atmos. Chem. Phys. Discuss.,* 18, 17387-17404.
- Lei, L. , J. S. Whitaker, and C. H. Bishop, 2018: Improving assimilation of radiance observations by implementing model space localization in an ensemble Kalman filter. *J. Adv. Model. Earth Syst.,* 10, 3221-3233.
- Chu, K., Z. Peng, Z. Liu, L. Lei, X. Kou, Y. Zhang, X. Bo, and J. Tian, 2018: Evaluating the impact of emissions regulations on the emissions reduction during the 2015 China Victory Day Parade with an ensemble square root filter. *J. Geophys. Res. Atmospheres,* 123, 4122-4131.
- Lei, L. , and J. S. Whitaker, 2017: Evaluating the trade-offs between ensemble size and ensemble resolution. *J. Adv. Model. Earth Syst.,* 9, 781-789.
- Bishop, C. H., J. S. Whitaker, and L. Lei, 2017: Gain form of the ensemble transform Kalman filter and its relevance to satellite data assimilation with model space ensemble covariance localization. *Mon. Wea. Rev.,* 145, 4575-4592.
- **Lei, L.**, J. L. Anderson, and J. S. Whitaker, 2016: Localizing the impact of satellite radiance observations using a global group ensemble filter. Submitted to *Adv. Model. Earth Syst*.
- **Lei, L.**, and J. S. Whitaker, 2016: A four-dimensional incremental analysis update for the ensemble Kalman filter. Submitted to *Wea. Rev.*
- Zagar, Nedjeljka, J. L. Anderson, N. Collins, T. Hoar, K. Reader, **Lei**, and J. Tribbia, 2016: Scale-dependent representation of the information content of observations in the global ensemble Kalman filter data assimilation. Submitted to *Mon. Wea. Rev.*
- **Lei, L.**, and J. S. Whitaker, 2015: Model space localization is not always better than observation space localization for assimilation of satellite radiances. *Wea. Rev.,* **143**, 3948-3955.
- **Lei, L.**, J. L. Anderson and G. S. Romine, 2015: Empirical localization functions for ensemble Kalman filter data assimilation in regions with and without precipitation. *Wea. Rev.,***143**, 3664-3679.
- **Lei, L.**, and J. P. Hacker, 2015: Nudging, ensemble, and nudging-ensembles for data assimilation in the presence of model error. *Wea. Rev.,***143**, 2600-2610.

- Hacker, J. P., and **Lei**, 2015: Multivariate Ensemble Sensitivity with Localization. *Mon. Wea. Rev.,***143**, 2013–2027.

- **Lei, L.**, and J. L. Anderson, 2014: Impacts of frequent assimilation of surface pressure observations on atmospheric analyses. *Wea. Rev.,***142**, 4477–4483.

- **Lei, L.**, and J. L. Anderson, 2014: Empirical localization of observations for serial ensemble Kalman filter data assimilation in an atmospheric general circulation model. *Wea. Rev.*, **142**, 1835-1851.

- **Lei, L.**, and J. Anderson, 2014: Comparisons of empirical localization techniques for ensemble Kalman filters in a simple atmospheric general circulation model. *Mon. Wea. Rev.*, **142**, 739-754.

- Anderson, J., and **Lei**, 2013: Empirical localization of observation impact in ensemble Kalman filters. *Mon. Wea. Rev.*, **141**, 4140-4153.

- **Lei, L.**, D. R. Stauffer, S. E. Haupt, and G. S. Young, 2012: A hybrid nudging-ensemble Kalman filter approach to data assimilation. Part I: application in the Lorenz system. *Tellus,***64A**, 18484, http://dx.doi.org/10.3402/tellusa.v64i0.18484.

- **Lei, L.**, D. R. Stauffer, and A. Deng, 2012: A hybrid nudging-ensemble Kalman filter approach to data assimilation. Part II: application in a shallow-water model. *Tellus,* **64A**, 18485, http://dx.doi.org/10.3402/tellusa.v64i0.18485.

- **Lei, L.**, D. R. Stauffer, and A. Deng, 2012: A hybrid nudging-ensemble Kalman filter approach to data assimilation in WRF/DART. *J. R. Meteorol. Soc.,***138**, 2066-2078.

- **Lei, L.**, and Z. Tan, 2008: On adaptive observation and adaptive observation *Scientia Meteorologica Sinica*, **28(1)**, 109-118.

Invited Talks

- Lei, L. , Evaluation of the WRF Ensemble Data Assimilation System for the 2016 West Pacific Tropical Cyclone Season, *5thYoung Scientist Forum of Earth Science,* Nanjing, China, October 26-29, 2018.

- Lei, L., Adaptive localization for satellite radiance observations in an ensemble Kalman filter, *35thChinese Meteorological Society Annual Meeting,* Hefei, China, October 23-26, 2018.

- Lei, L. , Vertical localization for EnKF radiance assimilation, *15thAnnual Meeting Asia Oceania Geosciences Society,* Honolulu, HI, June 3-8, 2018.

- Lei, L., and J. S. Whitaker, Vertical localization for EnKF radiance assimilation, *2ndCongress of China Geodesy and Geophysics,* Nanjing, China, September 23-25, 2016.

- **Lei, L.**, Automated estimation of localization for ensemble Kalman filter data *IMAGe Theme of the Year – Frontiers in Ensemble DataAssimilation for Geoscience Applications*, Boulder, CO, August 3-7, 2015.

- **Lei, L.**, Frontiers of ensemble data assimilation and its applications, Stony Brook University, NY, April 8, 2014.

- **Lei, L.**, and J. L. Anderson, Impacts of Varying the Spatial Density and Temporal Frequency of Surface Pressure Observations on Atmospheric Uncertainty, *IMAPredictability in Earth System Processes*, Minneapolis, November 18-21, 2013.

- **Lei, L.**, and D. Stauffer, Some innovation applications and approaches using nudging four dimensional data assimilation: Part II. A hybrid nudging-EnKF for improving data assimilation in the Lorenz and shallow water model, *Conferenceon applied inverse problems*, Vienna, Austria, July 20-24, 2009.

Professional Activities

- Associate editor of *Monthly Weather Review.*
- Associate editor of *Frontiers in Applied Mathematics and Statistics.*
- Reviewer for *Inverse Problems in Science and Engineering*, *Advances inAtmospheric Sciences, Meteorology and Atmospheric Physics, Monthly Weather Review*, *Weather and Forecasting*, and *Journal of Geophysical Research.*
- Member of American Meteorological Society (AMS), 2007-present.
- Member of Chi Epsilon Pi Honor Society.

Honors and Awards

2018 Kamide Lecture, Asia Oceania Geosciences Society (AOGS)

2016 Tepin Professor, Jiangsu Province

2015 Deng Feng Scholar Program B, Nanjing University

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