

Feiyu Lu | Curriculum Vitae

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Education

2011–2017 Ph.D., University of Wisconsin-Madison
Atmospheric and Oceanic Sciences

2007–2011 B.Sc., Peking University
Atmospheric Sciences

Professional Experience

2019– Associate Research Scholar, Princeton University and NOAA/GFDL

2017–2019 Postdoctoral Research Associate, Princeton University and NOAA/GFDL

2011–2017 Research Assistant, University of Wisconsin-Madison

2009–2011 Research Assistant, Peking University

Publications (peer-reviewed)

2020

Sun, J., Z. Liu, **F. Lu**, W. Zhang and S. Zhang: Strongly Coupled Data Assimilation Using Leading Averaged Coupled Covariance (LACC). Part III: Assimilation of Real World Reanalysis. *Monthly Weather Review*

Delworth, T. L., et al.: SPEAR: The next generation GFDL modeling system for seasonal to multidecadal prediction and projection. *Journal of Advances in Modeling Earth Systems*, 12, e2019MS001895

2018

Lu, F. and Z. Liu: Assessing Extratropical Influence on Observed El Niño–Southern Oscillation Events Using Regional Coupled Data Assimilation, *Journal of Climate*, 31, 8961–8969

Liu, Z, C. He, and **F. Lu**: Local and Remote Responses of Atmospheric and Oceanic Heat Transports to Climate Forcing: Compensation versus Collaboration, *Journal of Climate*, 31, 6445–6460

2017

Liu, H., Z. Liu, and **F. Lu**: A systematic comparison of particle filter and EnKF in assimilating time-averaged observations, *Journal of Geophysical Research: Atmospheres*, 122, 13,155–13,173

Lu, F., Z. Liu, S. Zhang and R. Jacob: Assessing Extratropical Impact on the Tropical Bias in Coupled Climate Model with Regional Coupled Data Assimilation, *Geophysical Review Letters*, 44, 3384–3392

Lu, F., Z. Liu, Y. Liu, S. Zhang and R. Jacob: Understanding the Control of Extratropical Atmospheric Variability on ENSO Using a Coupled Data Assimilation Approach, *Climate Dynamics*, 48(9–10), 3139–3160

2016

Liu, H., **F. Lu**, Z. Liu, Y. Liu and S. Zhang: Assimilating Atmosphere Reanalysis in Coupled Data Assimilation, *Journal of Meteorological Research*, 30, 572

2015

Lu, F., Z. Liu, S. Zhang, Y. Liu and R. Jacob: Coupled data assimilation using Leading Averaged Coupled Covariance. Part II: CGCM applications, *Monthly Weather Reviews*, 143(11), 4645-4659

Lu, F., Z. Liu, S. Zhang and Y. Liu: Coupled data assimilation using Leading Averaged Coupled Covariance. Part I: Simple model experiments, *Monthly Weather Reviews*, 143(9), 3823-3837

2014 and before

Liu, Y., Z. Liu, S. Zhang, X. Rong, R. Jacob, S. Wu and **F. Lu**: Ensemble-based parameter estimation in a Coupled GCM Using the Adaptive Spatial Average method, *Journal of Climate*, 27, 4002-4014

Liu, Y., Z. Liu, S. Zhang, R. Jacob, **F. Lu**, X. Rong, and S. Wu: Ensemble-based parameter estimation in a Coupled General Circulation Model, *Journal of Climate*, 27, 7151-7162

Lu, F., N. Yuan, Z. Fu and J. Mao: Universal scaling behaviors of meteorological variables' volatility and relations with original records, *Physica A*, 391(20), 4953-4962

Conferences and non-refereed publication

2020 Ocean Sciences Meeting: (OM33A-01) GFDL's SPEAR prediction system: MOM6 initialization and bias correction with data assimilation, *San Diego, CA*

2020 AMS Annual Meeting (33rd CVC): GFDL's SPEAR Seasonal Predictions: Initialization and Bias Correction with Coupled Data Assimilation, *Boston, MA*

- 2019 AGU Fall Meeting: (A21H-2733) GFDL's SPEAR prediction system: initialization and bias correction with coupled data assimilation, *San Francisco, CA*
- 2018 AGU Fall Meeting: (OS44A-08) Initialization for seasonal-to-decadal prediction in GFDL's SPEAR system using coupled data assimilation, *Washington, DC*
- 2017 Ph.D. Dissertation: Assessing Extratropical Influence on Tropical Climatology and Variability with Regional Coupled Data Assimilation, *University of Wisconsin-Madison*
- 2016 AGU Fall Meeting: (A11C-0024) Understanding the Control of Extratropical Atmospheric Variability on ENSO Using Regional Coupled Data Assimilation (RCDA), *San Francisco, CA*
- 2016 AMS Annual Meeting (20th IOAS-AOLS): Strongly Coupled Data Assimilation (SCDA) Using Leading Averaged Coupled Covariance (LACC), *New Orleans, LA*

Awards and Fellowships

- 2016 Outstanding Student Presentation Award, AGU Fall Meeting
- 2016 Best Student Oral Presentation, AMS Annual Meeting
- 2012 Schwerdtfeger Award for excellent performance in first year graduate studies, Department of Atmospheric and Oceanic Sciences, UW-Madison
- 2011 Excellent Graduate of Peking University and the City of Beijing

Other Prizes

- 2016 Conference Presentation Fund, UW-Madison Graduate School
- 2015 Department Travel Award, UW-Madison AOS
- 2015 Conference Presentation Fund, UW-Madison Graduate School
- 2009 Taconic Capital/PKU Scholarship

Teaching Experience

- Spring 2017 Guest lecturer for AOS573 *Computational Methods in AOS* (also co-designed the course)
- Fall 2016 Teaching Assistant for AOS101 *Weather and Climate* (sole instructor for lab and discussion section)

Presentations

Invited

- 2017 @GFDL, Understanding Extratropical Control on Tropical Variability and Climatology Using Regional Coupled Data Assimilation (RCDA)

Other

2020 @GFDL, SPEAR seasonal predictions: data assimilation, initialization and bias prevention

2016 @UW-Madison AOS, Understanding Extratropical Control on ENSO Using Regional Coupled Data Assimilation (RCDA)

2016 @UW-Madison AOS, Strongly Coupled Data Assimilation (SCDA) Using Leading Averaged Coupled Covariance (LACC)

Professional Memberships

2016—now American Geophysical Union

2015—now American Meteorological Society