

Liwei Jia

NOAA Geophysical Fluid Dynamics Laboratory (room 370)
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Professional Experience

University Corporation for Atmospheric Research/GFDL (NJ, Nov. 2018 - present)
Project Scientist: seasonal to decadal prediction

NOAA Climate Prediction Center/Innovim LLC. (MD, Nov. 2016 - present)
Atmospheric Scientist: statistical-dynamical forecast on sub-seasonal scales

Princeton University, AOS Program/GFDL (NJ, Nov. 2014 - Nov. 2016)
Associate Research Scholar: sub-seasonal and seasonal prediction, climate extremes

University Corporation for Atmospheric Research/GFDL (NJ, Mar. 2013 - Oct. 2014)
Postdoctoral Research Scientist: seasonal climate predictability and prediction, modeling

Center for Ocean-Land-Atmosphere Studies (MD, Jun. 2011 - Feb. 2013)
Postdoctoral Research Scientist: multi-model ensemble prediction, decadal climate predictability, climate change detection and attribution, numerical modeling

George Mason University (VA, Sep. 2006 - May. 2011)
Graduate Research Assistant: separating forced and unforced climate change signals

International Center for Theoretical Physics (Italy, Aug. 2010)
Teaching Assistant: statistical methods in seasonal prediction

Chinese Academy of Meteorological Sciences (China, Sep. 2003 - Jul. 2006)
Graduate Research Assistant: statistical downscaling in climate studies

Harbin Meteorological Bureau (China, Jul. 2002 - Aug. 2003)
Meteorologist and Assistant Engineer: operational weather forecast, weather service

Education

2011 Ph.D. in Climate Dynamics, George Mason University, Fairfax, VA, USA

2006 M.S. in Atmospheric Science, Chinese Academy of Meteorological Sciences/National Climate Center, Beijing, China

2002 B.S. in Atmospheric Science, Lanzhou University, Lanzhou, China

Publications

1. Sarah Strazzo, Dan C. Collins, Andrew Schepen, Q.J. Wang, Emily Becker and **Liwei Jia**, 2019: [Application of a Hybrid Statistical-dynamical System to Seasonal Prediction of North American Temperature and Precipitation](#). *Monthly Weather Review*, **147(2)**, 607-625.
2. Karin van der Wiel, Sarah Kapnick, Gabriel A. Vecchi, James A. Smith, P. C. D. Milly and **Liwei Jia**, 2018: [Characteristics and Future Changes of 100-year Mississippi Floods in a Global Climate Model](#). *J. Hydrometeorology*, **19(10)**, 1547-1563.
3. Xiaosong Yang, **Liwei Jia**, Sarah Kapnick, Tom Delworth, Gabriel A. Vecchi, Rich Gudgel, Seth Underwood and Fanrong Zeng, 2018: [On the Seasonal Prediction of the Western United States El Niño Precipitation during the 2015/16 Winter](#). *Climate Dynamics*, <https://doi.org/10.1007/s00382-018-4109-3>.
4. Ruonan Zhang, Chenghu Sun, **Liwei Jia** and Weijing Li, 2018: [The Impact of Arctic Sea Ice on Interannual Variations of Summer Ural Blocking](#), *International Journal of Climatology*, **38**, 4632-4650.
5. Lakshmi Krishnamurthy, Gabriel A. Vecchi, Xiaosong Yang, Karin van der Wiel, V. Balaji, Sarah B. Kapnick, **Liwei Jia**, Fanrong Zeng, Karen Paffendorf and Seth Underwood, 2018: [Causes and Probability of Occurrence of Extreme Precipitation Events like Chennai 2015](#). *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-17-0302.1>
6. **Liwei Jia** Xiaosong Yang, Gabriel A Vecchi, Richard Gudgel, Thomas Delworth, Stephan Fueglistaler, Pu Lin, Adam A. Scaife , Seth Underwood and Shian-Jiann Lin, 2017: [Seasonal Prediction Skill of Extratropical Surface Temperature Driven by the Stratosphere](#). *Journal of Climate*, **30**, 4463-4475.
7. Wei Zhang, Gabriel A. Vecchi, Hiroyuki Murakami, Gabriele Villarini, Thomas L. Delworth, Xiaosong Yang and **Liwei Jia**, 2017: [Dominant Role of Atlantic Multi-decadal Oscillation in the Recent Decadal Changes in Western North Pacific Tropical Cyclone Activity](#). *Geophys. Res. Lett.*, DOI: 10.1002/2017GL076397.
8. Liping Zhang, Thomas L. Delworth and **Liwei Jia**, 2017: [Diagnosis of Decadal Predictability of Southern Ocean Sea Surface Temperature in the GFDL CM2.1 model](#). *Journal of Climate*, **30**, 6309-6328.
9. H. Murakami, G. A. Vecchi, T. L. Delworth, A. T. Wittenberg, S. Underwood, R. Gudgel, X. Yang, **L. Jia**, F. Zeng, K. Paffendorf and W. Zhang, 2017: [Dominant Role of Subtropical Pacific Warming in Extreme Eastern Pacific Hurricane Season: 2015 and the Future](#). *Journal of Climate*, **30**, 243-264.
10. Liping Zhang, Thomas L. Delworth, Xiaosong Yang, Richard G. Gudgel, **Liwei Jia**, Gabriel A. Vecchi and Fanrong Zeng, 2017: [Estimating Decadal Predictability for the Southern Ocean Using the GFDL CM2.1 Model](#). *Journal of Climate*, **30**, 5187-5203.
11. W. Zhang, G.A. Vecchi, H. Murakami, G. Villarini, T.L. Delworth, K. Paffendorf, R. Gudgel, **L. Jia**, F. Zeng, X. Yang, 2017: [Influences of Natural Variability and Anthropogenic Forcing](#)

- on the Extreme 2015 Accumulated Cyclone Energy in the Western North Pacific. *Bulletin of the American Meteorological Society*, **97** S131-S135.
12. Jie He, Michael Winton, Gabriel Vecchi, Maria Rugenstein, **Liwei Jia**, 2016: [Transient Climate Sensitivity Depends on Base Climate Ocean Circulation](#), *Journal of Climate*, **30**, 1493-1504.
 13. Honghai Zhang, Thomas L. Delworth, Fanrong Zeng, Gabriel Vecchi, Karen Paffendorf, **Liwei Jia**, 2016: [Detection, Attribution and Projection of Regional Rainfall Changes on Multi-Decadal Time Scales: A Focus on Southeastern South America](#). *Journal of Climate*, **29**, 8515-8534.
 14. Karin van der Wiel, Sarah B Kapnick, Gabriel A Vecchi, William Cooke, Thomas L Delworth, **Liwei Jia**, Hiroyuki Murakami, Seth Underwood and Fanrong Zeng, 2016: [The Resolution Dependence of US Precipitation Extremes in Response to CO2 Forcing](#). *Journal of Climate*, **29**, 7991-8012, doi:10.1175/JCLI-D-16-0307.1
 15. Salvatore Pascale, Simona Bordoni, Sarah B. Kapnick, Gabriel A. Vecchi and **Liwei Jia**, 2016: [Gulf of California Moisture Surges within the North American Monsoon in a Suite of High-resolution Coupled Global Models](#), *Journal of Climate*, **29**, 7911-7936.
 16. Wei Zhang, Gabriel A. Vecchi, Gabriele Villarini, Hiroyuki Murakami, Thomas Delworth, **Liwei Jia**, Richard Gudgel and Fanrong Zeng, 2016: [Simulated Connections between ENSO and TCs near Guam in a High-Resolution GFDL Coupled Climate Model: Implications for Seasonal Forecasting](#), *Journal of Climate*, accepted.
 17. Di Tian, Ming Pan, **Liwei Jia**, Gabriel Vecchi and Eric F. Wood, 2016: [Assessing GFDL High-resolution Climate Model Water and Energy Budgets from AMIP Simulations over Africa](#), *J. Geophys. Res. Atmos.*, **121**, doi:10.1002/2016JD025068.
 18. W. Zhang, G. A. Vecchi, G. Villarini, H. Murakami, A. Rosati, X. Yang, **L. Jia** and Fanrong Zeng, 2016: [Modulation of Western North Pacific Tropical Cyclone Activity by the Atlantic Meridional Mode](#), *Climate Dynamics*, DOI 10.1007/s00382-016-3099-2.
 19. **Liwei Jia**, Gabriel Vecchi, Xiaosong Yang, Richard Gudgel, Thomas Delworth, William Stern, Karen Paffendorf, Seth Underwood and Fanrong Zeng, 2016: [The Roles of Radiative Forcing, Sea Surface Temperatures, and Atmospheric and Land Initial Conditions in U.S. Summer Warming Episodes](#), *Journal of Climate*, **29**, 4121-4235.
 20. Wei Zhang, Gabriel Vecchi, Hiroyuki Murakami, Gabriele Villarini and **Liwei Jia**, 2016: [The Pacific Meridional Mode and the Occurrence of Tropical Cyclones in the Western North Pacific](#), *Journal of Climate*, **29**, 381-398.
 21. H. Murakami, G. A. Vecchi, T. Delworth, K. Paffendorf, R. Gudgel, **L. Jia** and F. Zeng, 2015: [Investigating the Influence of Anthropogenic Forcing and Natural Variability on the 2014 Hawaiian Hurricane Season](#), *Bulletin of the American Meteorological Society*, **96**, 120-124.

22. Xiaosong Yang, G. A. Vecchi, T. L. Delworth, K. Paffendorf, R. Gudgel, **Liwei Jia**, S. Underwood and F. Zeng, 2015: [Extreme North America Winter Storm Season of 2013/14: Roles of Radiative Forcing and the Global Warming Hiatus](#), *Bulletin of the American Meteorological Society*, **96**, 25-28.
23. Xiaosong Yang, Gabriel Vecchi, Rich G. Gudgel, Thomas L. Delworth, Shaoqing Zhang, Anthony Rosati, **Liwei Jia** and Coauthors, 2015: [Seasonal Predictability of Extratropical Storm Tracks in GFDL's High-resolution Climate Prediction Model](#), *Journal of Climate*, **28**, 3592-3611.
24. **Liwei Jia**, Xiaosong Yang, Gabriel Vecchi and Coauthors, 2015: [Improved Seasonal Prediction of Temperature and Precipitation over Land in a High-resolution GFDL Climate Model](#), *Journal of Climate*, **28**, 2044-2062.
25. Gabriel A. Vecchi, Tom Delworth, Rich Gudgel, Sarah Kapnick, Anthony Rosati, Andrew Wittenberg, Fanrong Zeng, Whit Anderson, Venkatramani Balaji, Keith Dixon, **Liwei Jia** and Coauthors, 2014: [On the Seasonal Forecasting of Regional Tropical Cyclone Activity](#), *Journal of Climate*, **27**, 7994-8016.
26. **Liwei Jia**, Timothy DelSole and Michael K. Tippett, 2014: [Can Optimal Projection Improve Dynamical Model Forecasts?](#), *Journal of Climate*, **27**, 2643-2655.
27. Timothy DelSole, **Liwei Jia** and Michael K. Tippett, 2013: [Scale-selective Ridge Regression for Multimodel Forecasting](#), *Journal of Climate*, **26**, 7957-7965.
28. Timothy DelSole, **Liwei Jia** and Michael K. Tippett, 2013: [Decadal Prediction of Observed and Simulated Sea Surface Temperatures](#), *Geophys. Res. Lett.*, **40**, 2773-2778.
29. **Liwei Jia**, Timothy DelSole, 2012: [Multi-year Predictability of Temperature and Precipitation Identified in Climate Models](#), *Geophys. Res. Lett.*, **39**, doi:10.1029/2012GL052778.
30. **Liwei Jia** and Timothy DelSole, 2012: [Optimal Determination of Time-Varying Climate Change Signals](#), *Journal of Climate*, **25**, 7122-7137.
31. **Liwei Jia** and Timothy DelSole, 2011: [Diagnosis of Multiyear Predictability on Continental Scales](#), *Journal of Climate*, **24**, 5108-5124.
32. **Liwei Jia**, Weijing Li, Deliang Chen and Xiaocun An, 2006: [A Monthly Atmospheric Circulation Classification and Its Relationship with Climate in Harbin](#), *Journal of Meteor. Res.*, **20**(4), 402-412.
33. **Liwei Jia** and Weijing Li, 2006: [Relationship Between Precipitation in Northeast China and the Atmospheric Circulation](#), *Journal of Applied Meteorological Science*, **17**, 557-566. (in Chinese, English abstract)

Book Chapter

Timothy DelSole, Michael K. Tippett and **Liwei Jia**, 2015: Multi-year Prediction and Predictability, *World Scientific Series on Weather and Climate, Climate Change: Multidecadal and Beyond*, Chapter 14, pp 219-233, 2015.

Professional Service

Panel reviewer for the 2014 **U.S. Department of Energy (DOE)** Regional and Global Climate Modeling Program Panel.

Panel Reviewer for U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration 2015/2016/2018 Ernest F. Hollings and Educational Partnership Program (EPP) **Undergraduate Scholarships**.

Mentor for 2016 summer intern at Princeton University Cooperative Institute for Climate Science.

Section Chair of 2015 American Geophysical Union Joint Assembly, section: Atmospheric Sciences General Contributions, Including Modeling.

Judge for Outstanding Student Paper Awards in 2015 American Geophysical Union Fall Meeting, and 2015 American Geophysical Union Joint Assembly.

Reviewer for journals: Journal of Climate; Nature Communications; Climate Dynamics; Scientific Reports; Geophysical Research Letters; Journal of Hydrometeorology; Advances in Meteorology; Advances in Atmospheric Sciences; Engineering; Atmospheric Research; Water; Forest; Global Ecology and Biogeography; Sustainability; Journal of the Atmospheric Sciences; Atmosphere; International Journal of Climatology; Journal of Geophysical Research-Atmosphere.

Presentations

1. Sep. 2019, Geophysical Fluid Dynamics Laboratory (external review), Princeton, NJ
2. Jul. 2017, 30th Conference on Climate Variability and Change, 24th Conference on Probability and Statistics in the Atmospheric Sciences, and the 16th Conference on Artificial Intelligence and its Applications to the Environmental Sciences, Baltimore, MD
3. Feb. 2017, NOAA Climate Prediction Center Seminar Series, College Park, MD
4. Oct. 2016, National Oceanic and Atmospheric Administration's 41st Climate Diagnostics and Prediction Workshop, Orono, ME
5. Jan. 2016, Geophysical Fluid Dynamics Laboratory Poster Expo (poster), Princeton, NJ
6. Dec. 2015, American Geophysical Union Fall Meeting, San Francisco, CA
7. Sep. 2015, Workshop on using and interpreting climate information from GFDL models for epidemiological studies in Africa and Asia, Princeton University, NJ
8. Sep. 2015, North American Multi-Model Ensemble Teleconference
9. May 2015, American Geophysical Union Joint Assembly, Montreal, Canada
10. Mar. 2015, North American Multi-Model Ensemble Teleconference

11. May 2014, Geophysical Fluid Dynamics Laboratory Science Review, Princeton, NJ
12. Feb. 2014, World Meteorological Organization International Conference on Subseasonal to Seasonal Prediction (poster), College Park, MD
13. Jan. 2014, Geophysical Fluid Dynamics Laboratory Poster Expo (poster), Princeton, NJ
14. Nov. 2013, Geophysical Fluid Dynamics Laboratory, Princeton, NJ
15. Sep., 2012, Ocean University of China, Qingdao, China
16. Sep., 2012, National Climate Center of China, Beijing, China
17. Sep. 2012, National Taiwan University International Science Conference on Climate Change: Multidecadal and Beyond, Taipei, Taiwan
18. Oct. 2011, World Climate Research Programme Open Science Conference: Climate Research in Service to Society, Denver, CO
19. Oct. 2011, National Oceanic and Atmospheric Administration's 36th Climate Diagnostics and Prediction Workshop, Fort Worth, TX
20. Sep. 2011, Department of Energy (DOE) Climate and Earth System Modeling Principal Investigators' Meeting, Washington DC
21. Aug. 2010: The International Centre for Theoretical Physics, Conference on Decadal Predictability, Trieste, Italy
22. Jun. 2010, US-Korea Workshop on Dynamical Seasonal Prediction, Busan, Korea
23. Mar. 2010, Department of Energy (DOE) Integrated Climate Change Modeling Science Team Meeting (poster), Gaithersburg, MD