

# Jie (Jay) He

Jie.He@noaa.gov

(305) 989-4869

Princeton University

201 Forrestal Road, Princeton, NJ 08540

<http://www.princeton.edu/~jieh>

---

## **RESEARCH INTERESTS**

Climate change and variability, hydrology, climate dynamics, atmosphere-ocean-land interaction, climate sensitivity and ocean heat uptake

## **CURRENT POSITION**

Postdoctoral Research Associate and Visiting Scientist  
Princeton University and Geophysical Fluid Dynamics Laboratory  
Advisors: Gabriel A. Vecchi and Michael Winton

## **EDUCATION**

- 2015            Ph. D. University of Miami  
                  Meteorology and Physical Oceanography  
                  Advisor: Brian J. Soden  
                  *Dissertation – Mechanisms of Changes in Precipitation and Atmospheric Circulation from Anthropogenic Forcing*
- 2010            B.S. Nanjing University  
                  Atmospheric Science

## **RESEARCH EXPERIENCE**

- 11/2015 – present    Postdoctoral Research Associate and Visiting Scientist, Atmospheric and Oceanic Sciences Program, Princeton University and GFDL/NOAA  
                  *Climate Variability; Air-sea Interaction & Climate Sensitivity*
- 2010 – 2015    Graduate Research Assistant, University of Miami  
                  *Future Changes in Atmospheric Circulation and Hydrological Cycle*
- 2010            Undergraduate Research Assistant, Nanjing University  
                  *The Relationship between ENSO and the East Asian Monsoon*
- 2009            Project Leader, Scientific Expedition to Lake Baikal  
                  *Paleoclimatology of Lake Baikal from Tree Ring Records*
- 2009            Project Leader, National Innovation Experiment Program  
                  *Drought Prediction of Central China with Linear Inverse Model*

## PUBLICATIONS

### Peer-reviewed

1. **He, J.**, C. Deser and B. J. Soden (2016), Atmospheric and oceanic origins of tropical precipitation variability. *J. Climate*, doi:10.1175/JCLI-D-16-0714.1.
2. Ma, J., G. Foltz, B. J. Soden, Huang, G., **He, J.**, and Dong, C. (2016), Will surface winds weaken in response to global warming?, *Environ. Res. Lett.*, 11, 124012., <http://dx.doi.org/10.1088/1748-9326/11/12/124012>.
3. **He, J.**, M. Winton, G. Vecchi, L. Jia, and M. Rugenstein (2016), Transient climate sensitivity depends on base climate ocean circulation. *J. Climate*, doi:10.1175/JCLI-D-16-0581.1. <http://dx.doi.org/10.1175/JCLI-D-16-0581.1>
4. **He, J.**, and B. J. Soden (2016), A re-examination of the projected subtropical precipitation decline. *Nature Climate Change*, doi:10.1038/nclimate3157. <http://dx.doi.org/10.1038/nclimate3157>.  
*Featured in News and Views:*  
<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate3167.html>
5. **He, J.**, and B. J. Soden (2016), The impact of SST biases on projections of anthropogenic climate change: a greater role for atmosphere-only models?, *Geophys. Res. Lett.*, 43(14), 2016GL069803, doi:10.1002/2016GL069803.
6. **He, J.**, and B. J. Soden (2015), Does the lack of coupling in SST-forced atmosphere-only models limit their usefulness for climate change studies?, *J. Climate*, 29(12), 4317–4325, doi:10.1175/JCLI-D-14-00597.1.
7. **He, J.**, and B. J. Soden (2015), Anthropogenic weakening of the tropical circulation: the relative roles of direct CO<sub>2</sub> forcing and sea surface temperature change, *J. Climate*, 28(22), 8728–8742, doi:10.1175/JCLI-D-15-0205.1.
8. **He, J.**, B. J. Soden, and B. Kirtman (2014), The robustness of the atmospheric circulation and precipitation response to future anthropogenic surface warming, *Geophys. Res. Lett.*, 41(7), 2014GL059435, doi:10.1002/2014GL059435.
9. Hu, H., X. Hong, Y. Zhang, X. Yang, and **He, J.** (2013), The critical role of Indian summer monsoon on the remote forcing between Indian and Northwest Pacific during El Niño decaying year, *Science China Earth Sciences*, 56(3), 408–417, doi:10.1007/s11430-012-4569-y.
10. Hu, H., **He, J.**, Q. Wu, and Y. Zhang (2011), The Indian Ocean’s asymmetric effect on the coupling of the Northwest Pacific SST and anticyclone anomalies during its spring–summer transition after El Niño, *Journal of Oceanography*, 67(3), 315–321, doi:10.1007/s10872-011-0039-y.

### In preparation

1. **He, J.**, G. Vecchi, N. Johnson, B. Kirtman and L. Jia, Tropical air-sea interaction. Part I: a model-based theory, in prep
2. **He, J.**, G. Vecchi, N. Johnson, B. Kirtman and L. Jia, Tropical air-sea interaction. Part II: changes from anthropogenic forcing, in prep

## **SELECTED PRESENTATIONS**

- 2016 What Drives Projections of Subtropical Precipitation Decline? (invited)  
*Climate Analysis Section Seminar, NCAR, US*
- 2016 A Re-examination of the Projected Subtropical Precipitation Decline (invited)  
*SEAS Colloquium in Climate Science, Columbia University, US*
- 2016 Mechanisms of Subtropical and Extratropical Precipitation Changes from Anthropogenic Forcing (invited)  
Department of Earth Sciences, Zhejiang University, China
- 2015 Mechanisms of Regional Climate Change from Anthropogenic Forcing (invited)  
Carnegie Department of Global Ecology, Stanford, US
- 2015 The Role of Ocean Coupling on Anthropogenic Climate Change (Oral Presenter)  
*95<sup>th</sup> AMS Annual Meeting, Phoenix, US*
- 2014 The Role of Ocean Coupling on Regional Precipitation Change (Poster)  
*47<sup>th</sup> AGU Annual Meeting, San Francisco, US*
- 2014 On the Relative Roles of Air-sea Coupling, Atmospheric Radiative Forcing and Surface Warming in Future Precipitation Changes (Oral Presenter)  
*Global Energy and Water Exchange 7<sup>th</sup> International Conference, Netherlands*
- 2012 The Insensitivity of Precipitation and Atmospheric Circulation to the Pattern of Anthropogenic Sea Surface Temperature Changes (Poster)  
*45<sup>th</sup> AGU Annual Meeting, San Francisco, US*

## **AWARDS & FELLOWSHIPS**

- 2015 Princeton AOS Postdoctoral Fellowship  
*Princeton University*
- 2015 First place in student oral presentation competition  
*95<sup>th</sup> AMS Annual Meeting, Climate Variability and Change Conference*
- 2014 Outstanding presentation for students and early career scientists  
*Global Energy and Water Exchange (GEWEX) 7<sup>th</sup> International Conf.*
- 2010 Excellent Graduate  
*Nanjing University*
- 2008 & 2009 National Innovation Fellowship  
*National Innovation Experiment Program for University Students*
- 2008 & 2009 People's Scholarship (top 5% students schoolwide)  
*Nanjing University*
- 2007 National Scholarship (top 0.2% students nationwide)  
*Chinese Ministry of Education*
- 2006 & 2008 Community Service and Leadership Award  
*Undergraduate Student Union, Nanjing University*
- 2006 Yulu Fellowship  
*Nanjing University*

## **TEACHING EXPERIENCE**

### Academic

2013 Fall Teaching Assistant, University of Miami  
*Physics 101*, Instructor: Dr. Kevin Leaman

2010 Fall Teaching Assistant, University of Miami  
*Introduction to Weather and Climate*, Instructor: Dr. Brian J. Soden

### Non-academic

2012 – 2014 Dance Instructor, SalsaCaché Dance Studio

## **PROFESSIONAL ACTIVITIES**

Reviewer for *Nature Climate Change*, *Scientific Report*, *Journal of Climate*, *Geophysical Research Letters*, *Journal of Geophysical Research: Atmospheres*, *Climate Dynamics*, *Atmosphere*

Member, American Geophysical Union, 2012 – present

Member, American Meteorology Society, 2014 – present

## **SKILLS & TECHNIQUES**

Modeling experience: CCSM4, CESM1, GFDL-ESM2M and GFDL-FLOR

Programming knowledge: Fortran, C, Matlab, NCL and Unix shell

Language: fluent in English and Chinese