

Jie (Jay) He

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RESEARCH INTERESTS

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

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

EMPLOYMENT

- 2018 – Assistant Professor
 EAS, Georgia Institute of Technology
- 2015 – 2018 Postdoctoral Research Associate and Visiting Scientist
 AOS, Princeton University and Geophysical Fluid Dynamics Laboratory
 Tropical air-sea Interaction & Ocean Heat Uptake
- 2010 – 2015 Graduate Research Assistant
 RSMAS, University of Miami
 Changes in Atmospheric Circulation and Hydrological Cycle

AWARDS & FELLOWSHIPS

- 2021 CAREER Award
 National Science Foundation
- 2019, 2021 Thank a Teacher certificate
 Georgia Tech
- 2015 Princeton AOS Postdoctoral Fellowship
 Princeton University
- 2015 First place in student oral presentation competition
 95th AMS Annual Meeting, Climate Variability and Change Conf.

- 2014 Outstanding presentation for students and early career scientists
Global Energy and Water Exchange (GEWEX) 7th International Conf.
- 2008 & 2009 National Innovation Fellowship
National Innovation Experiment Program for University Students
- 2008 & 2009 People's Scholarship
Nanjing University
- 2007 National Scholarship (top 1%)
Chinese Ministry of Education

PUBLICATIONS

Peer-reviewed

1. Zhang, H., R. Seager, **He, J.**, H. Diao, and S. Pascale (2021), Quantifying atmosphere and ocean origins of North American precipitation variability. *Climate Dynamics*, 1–24, <https://doi.org/10.1007/s00382-021-05685-0>.
2. **Fosu, B.**, **He, J.**, and Liguori, G. (2020), Equatorial Pacific warming attenuated by SST warming patterns in the tropical Atlantic and Indian Oceans. *Geophysical Research Letters*, e2020GL088231, <https://doi.org/10.1029/2020GL088231>.
3. **Fosu, B.**, **He, J.**, and S.-Y. S. Wang (2020), The influence of wintertime SST variability in the Western North Pacific on ENSO diversity. *Climate Dynamics*, <https://doi.org/10.1007/s00382-020-05193-7>.
4. Vecchi, GA, Delworth, T., Murakami, H., SD Underwood, AT Wittenberg, Zeng, F., Zhang, W., Baldwin, J., Bhatia, K., Cooke, W., **He, J.**, SB Kapnick, Knutson, T., Villarini, G., van der Wiel, K., Anderson, W., V. Balaji, J-H Chen, K. Dixon, R. Gudgel, L. Harris, L. Jia, NC Johnson, S-J Lin, M. Liu, J. Ng, A. Rosati, J. Smith, X. Yang (2019), Tropical cyclone sensitivities to CO₂ doubling: roles of atmospheric resolution, synoptic variability and background climate changes. *Climate Dynamics*, doi:10.1007/s00382-019-04913-y.
5. Irvine, P., K. Emanuel, **He, J.**, L. W. Horowitz, G. Vecchi, and D. Keith (2019), Halving warming with idealized solar geoengineering moderates key climate hazards. *Nature Climate Change*, doi:10.1038/s41558-019-0398-8.
6. **He, J.**, N. C. Johnson, G. A. Vecchi, B. Kirtman, A. T. Wittenberg, and S. Sturm (2018), Precipitation sensitivity to local variations in tropical sea surface temperature. *J. Climate*, doi:10.1175/JCLI-D-18-0262.1.
7. **He, J.**, B. Kirtman, B. J. Soden, G. A. Vecchi, H. Zhang, and M. Winton (2018), Impact of ocean eddy resolution on the sensitivity of precipitation to CO₂ increase. *Geophys. Res. Lett.*, 45, 7194–7203, doi:10.1029/2018GL078235.
8. **He, J.**, C. Deser and B. J. Soden (2017), Atmospheric and oceanic origins of tropical precipitation variability. *J. Climate*, doi:10.1175/JCLI-D-16-0714.1.
9. **He, J.**, and B. J. Soden (2017), 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>

10. 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>.
11. **He, J.**, M. Winton, G. Vecchi, L. Jia, and M. Rugestein (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>
12. **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.
13. **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.
14. **He, J.**, and B. J. Soden (2015), Anthropogenic weakening of the tropical circulation: the relative roles of direct CO₂ forcing and sea surface temperature change, *J. Climate*, 28(22), 8728–8742, doi:10.1175/JCLI-D-15-0205.1.
15. **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.
16. 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.
17. 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.

TEACHING

- 2019 – Instructor, Georgia Institute of Technology
Climate & Global Change
- 2019 – Instructor, Georgia Institute of Technology
Thermodynamics of Atmospheres & Oceans
- 2013 Teaching Assistant, University of Miami
Physics 101, Instructor: Dr. Kevin Leaman
- 2010 Teaching Assistant, University of Miami
Introduction to Weather and Climate, Instructor: Dr. Brian J. Soden

SERVICE

Professional Contributions

Guest Editor

Atmosphere

Journal Review

Atmosphere, Climate Dynamics, Climate of the Past, Communications Earth & Environment, Geophysical Research Letters, Geoscientific Model Development, Journal of Climate, Journal of Geophysical Research: Atmospheres, Nature Climate Change, npj Climate and Atmospheric Science, Proceedings of the National Academy of Sciences, Science Bulletin, Scientific Report

Proposal Review

AGU Student Grant, European Research Council, National Science Foundation

Book Review

Cambridge University Press

Other Activities

Member, American Geophysical Union, 2012 – present

Member, American Meteorology Society, 2014 – present

Institution Contributions

Academic Faculty Senate (2019 – present), *Georgia Tech*

Graduate Recruitment Committee (2018 – 2019), *Georgia Tech, EAS*

Comprehensive Exam Committee (E. Castorina, A. Jersild, K. Lu, K. Chong)

Dissertation Committee (G. Liguori, S. Zhao, D. Sun, Y. Joh)