

HUI LI

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EDUCATION

University of Illinois at Urbana-Champaign *Dec 2014 - 2018*
PhD in Atmospheric Sciences

University of Illinois at Urbana-Champaign *Dec 2014 - 2018*
PhD Certificate in Computational Science and Engineering

University of Illinois at Urbana-Champaign *Aug 2013 - Dec 2014*
M.S. in Atmospheric Sciences
Thesis: Modeled Sensitivity of the Northwestern Pacific Upper Ocean's Response to Tropical Cyclones in a Fully-coupled Climate Model with Various Ocean Resolution
GPA: 3.8/4.0

Ocean University of China *Sep 2009 - Jun 2013*
B.S. in Atmospheric Sciences with honor
Thesis: The Impact of Cold Air on Hurricane Sandy
GPA: 96/100

PROFESSIONAL APPOINTMENTS

Project Scientist II *2023 - present*
Climate & Global Dynamics Lab, National Center for Atmospheric Research

Project Scientist I *2020 - 2023*
Climate & Global Dynamics Lab, National Center for Atmospheric Research

Postdoctoral Associate *2018 - 2020*
Department of Geology and Geophysics, Yale University

Research Assistant *2013 - 2018*
Department of Atmospheric Sciences, University of Illinois at Urbana Champaign

Research Assistant *May 2016 - Aug 2016*
Program in Arms Control & Domestic and International Security, University of Illinois at Urbana Champaign

PUBLICATIONS

Submitted and In Preperation

Shield, C., Li H., et al. (submitted) The upper oceans response to Northeast Pacific atmospheric rivers under climate change.

Li, H., Balaguru, K., Hu, A., Meehl, G.A. (2023, in prep) Environmental Controls on Tropical Cyclone Rapid Intensification in High-resolution Versions of CESM1.3 and E3SMv1.

Published

Li, H., J. H. Richter, A. Hu, G. A. Meehl, and D. MacMartin, 2023: Responses in the Subpolar North Atlantic in Two Climate Model Sensitivity Experiments with Increased Stratospheric Aerosols. *J. Climate*, 36, 76757688, <https://doi-org.cuucar.idm.oclc.org/10.1175/JCLI-D-23-0225.1>.

Fasullo JT, Golaz J-C, Caron JM, Li, H., et al (2024) An overview of the E3SM version 2 large ensemble and comparison to other E3SM and CESM large ensembles. *Earth Syst Dyn* 15:367386. <https://doi.org/10.5194/esd-15-367-2024>

Li, H., Hu, A., Meehl, G. A. (2023) Role of tropical cyclones in determining ENSO characteristics. *Geophysical Research Letters*, 50, e2022GL101814. <https://doi.org/10.1029/2022GL101814>

Li, H., Hu, A., Meehl, G. A., Rosenbloom, N., Strand, W. G. (2022). Impact of tropical cyclone wind forcing on the global climate in a fully-coupled climate model. *Journal of Climate*, 140. <https://doi.org/10.1175/jcli-d-22-0211.1>

Li, H., Richter, J. H., Lee, C., Kim, H. (2022). Subseasonal Tropical Cyclone Prediction and Modulations by MJO and ENSO in CESM2. *Journal of Geophysical Research: Atmospheres*, 127(22). <https://doi.org/10.1029/2022jd036986>

Yeager, S. G., Rosenbloom, N., Glanville, A. A., Wu, X., Simpson, I., Li, H., et al. (2022). The Seasonal-to-Multiyear Large Ensemble (SMYLE) prediction system using the Community Earth System Model version 2. *Geoscientific Model Development*, 15(16), 64516493. <https://doi.org/10.5194/gmd-15-6451-2022>

Li, H., A. V. Fedorov, and W. Liu (2021), AMOC Stability and Diverging Response to Arctic Sea Ice Decline in Two Climate Models, *Journal of Climate*. DOI: 10.1175/JCLI-D-20-0572.1

Li, H., and A.V. Fedorov (2021), Persistent Freshening of the Arctic Ocean and Changes in the North Atlantic Salinity Caused by Arctic Sea Ice Decline, *Climate Dynamics* <https://doi-org.cuucar.idm.oclc.org/10.1007/s00382-021-05850-5>

Li, H., and R. L. Sriver (2019), Impact of Air-Sea Coupling on the Simulated Global Tropical Cyclone Activity in the High-Resolution Community Earth System Model (CESM), *Climate Dynamics*. DOI: 10.1007/s00382-019-04739-8

Sriver, R. L., H. Li (2019), Analyzing Tropical Cyclone Climate Interactions Using the High-Resolution Community Earth System Model, *Blue Waters 2019 Annual Report*

Li, H., and R. L. Sriver (2018), Impact of Tropical Cyclones on the Global Ocean: Results from Multi-decadal Global Ocean Simulation Isolating Tropical Cyclone Forcing, *Journal of Climate*. DOI: 10.1175/JCLI-D-18-0221.1

Sriver, R. L., H. Li (2018), Impact of Ocean Coupling on Simulated Tropical Cyclone Activity in the High-Resolution Community Earth System Model, *Blue Waters 2017 Annual Report*.

Li, H., and R. L. Sriver (2017), Tropical Cyclone Activity in the High-resolution Community Earth System Model and the Impact of Ocean Coupling, *Journal of Advances in Modeling Earth Systems*, doi:10.1002/2017MS001199

Huang, A., H. Li, R. L. Sriver, A. V. Fedorov, and C. M. Brierley (2017), Regional Variations in the Ocean Response to Tropical Cyclones: Ocean Mixing Versus Low Cloud Suppression, *Geophys. Res. Lett.*, 44(4), 2016GL072023, doi:10.1002/2016GL072023.

Srивer, R., Li, H. (2017), Analyzing Tropical Cyclone-Climate Interactions Using the Community Earth System Model (CESM), Blue Waters 2016 Annual Report.

Li, H., Srивer, R. (2016), Effects of Ocean Horizontal Resolution on Simulations of Tropical Cyclone-induced Upper Ocean Responses, *J. Geophys. Res. Oceans*, 121(11), 83058319, doi:10.1002/2016JC011951.

Srивer, R., Li, H. (2016), Scaling of the CESM to Ultra-high Resolutions for Analyzing Tropical Cyclone-Climate Feedbacks, Blue Waters 2015 Annual Report.

Li, H., Srивer, R., Goes, M. (2015), Modeled Sensitivity of the Northwestern Pacific Upper Ocean's Response to Tropical Cyclones in a Fully-coupled Climate Model with Various Ocean Grid Resolution, *Journal of Geophysical Research-Oceans*, doi: 10.1002/2015JC011226.

Ruan, X.-Z., HUANG, F., LI, H. (2012), Variation in Core region of the Antarctic Oscillation and Its Synoptic and Intraseasonal Oscillation, *Periodical of Ocean University of China*, 42(Sup.): 241-248.

PRESENTATIONS

- Oral Presentations

Li, H. (2023): Subseasonal tropical cyclone prediction in CESM2, 2023 AMS Annual Meeting

Li, H. (2022): Role of tropical cyclones in determining ENSO characteristics, 2022 AGU Fall Meeting

Li, H. (2022): Subseasonal tropical cyclone prediction in CESM2, 2022 AGU Fall Meeting

Li, H. (2022): Impact of tropical cyclone wind on ENSO, the 27th Annual CESM Workshop

Li, H. (2022): Subseasonal tropical cyclone prediction in CESM2, 2022 CESM winter working group meeting

Li, H. (2022): Impact of tropical cyclone wind forcing on the global climate in a fully-coupled model, 2022 CESM winter working group meeting

Li, H. (2022): Impact of tropical cyclone wind forcing on the global climate in a fully-coupled model, Ocean Sciences Meeting, AGU 2022

Li, H. (2021): Can Tropical Cyclones Affect the Climate? Invited seminar at the Geophysical Fluid Dynamics Laboratory.

Li, H., Fedorov, A. V.(2020): Arctic Ocean Freshening Caused by Intensification of Sea Ice Seasonal Cycle, Ocean Sciences Meeting, AGU 2020

Li, H.,(2020): Can Hurricanes affect the Climate? Climate and Global Dynamics seminar series, National Center for Atmospheric Research

Li, H.,(2020): AMOC stability and response to Arctic sea ice decline: contrasting two models, Scientific Report, National Center for Atmospheric Research

Li, H., Fedorov, A. V.(2019): Arctic Ocean Freshening Caused by Intensification of Sea Ice Seasonal Cycle, 15th Conference on Polar Meteorology and Oceanography

Srивer, R. and Li, H.(2019): The Response of Tropical Cyclone Activity to Increasing CO2 in the Community Earth System Model (CESM), 2019 Blue Waters Annual Symposium

Li, H. (2018): Investigating Tropical Cyclone-Climate Interactions Using the High-resolution Community Earth System Model (CESM), Atmosphere, Ocean and Climate Dynamics Seminar Series at Yale

Li, H., Sriver, R. (2018): Sensitivity of global TC activity to ocean-atmosphere coupling and atmospheric CO₂ using the high-resolution Community Earth System Model, 2018 AGU Fall Meeting

Li, H., Sriver, R. (2018): Interactions Between Tropical Cyclones and The Global Ocean on Seasonal to Interannual Timescales Using the High Resolution Community Earth System Model, 2018 Ocean Science Meeting

Li, H., Sriver, R. (2017): Impact of Ocean Coupling on the Simulated Tropical Cyclone Activity in the High-resolution Community Earth System Model, 2017 Aegean Conference – The 6th International Summit on Hurricanes and Climate Change

Li, H., Sriver, R. (2017): Simulating Tropical Cyclones Using the High-resolution Earth System Model, Invited talk to Vrije Univerteit Amsterdam (VU Amsterdam)

Bock, D., Li, H., Sriver, R. (2017): Simulation and Visual Representation of Tropical Cyclone-Ocean Interactions, The International Conference for High Performance Computing, Networking, Storage and Analysis (SC17)

Sriver, R., Li, H. (2017): Simulating and Visualizing Hurricane-Ocean Interactions using High-Resolution CESM, NCSA Faculty Fellow Brown Bag

Li, H., Sriver, R. (2016): Analyzing tropical cyclone-climate interactions using the high resolution Community Earth System Model, 2016 Blue Waters Annual Symposium

Li, H., Sriver, R. (2015): Effect of tropical cyclones on the upper ocean – the role of horizontal ocean grid resolution, 2015 AGU Fall Meeting

Li, H., Sriver, R., Goes, M. (2015): Analyzing the sensitivity of the northwestern Pacific upper ocean's response to tropical cyclones in a fully-coupled climate model, The 5th International Summit on Hurricanes and Climate Change

- Poster Presentations

Li, H., Sriver, R. (2019): Impact of air sea coupling on the simulated global tropical cyclone activity in the high-resolution Community Earth System Model, 2019 Blue Waters Annual Symposium

Li, H., Sriver, R. (2017): Impact of Ocean Coupling on the Simulated Tropical Cyclone Activity in the High-resolution Community Earth System Model, 2017 Aegean Conference – The 6th International Summit on Hurricanes and Climate Change

Li, H., Sriver, R. (2017): Impact of ocean coupling on simulated tropical cyclone activity in the High-resolution Community Earth System Model, 2017 Research Review of the School of Earth, Society and Environment

Li, H., Sriver, R. (2016): Effect of ocean horizontal resolution on simulations of tropical cyclone-induced upper ocean responses, 2016 Research Review of the School of Earth, Society and Environment

Sriver, R., Li, H. (2015): Tropical cyclone-ocean interactions in a high resolution earth system model, 2015 AGU Fall Meeting

Li, H., Sriver, R., Goes, M. (2014): Modeled sensitivity of the northwestern Pacific upper ocean's response to tropical cyclones in a fully-coupled climate model with various ocean grid resolution, 2014 AGU Fall Meeting

Li, H., Sriver, R., Goes, M. (2014): Modeled sensitivity of the northwestern Pacific upper ocean's response to tropical cyclones in a fully-coupled climate model with various ocean grid resolution, 2015 Research Review of the School of Earth, Society and Environment

HONORS AND AWARDS

- ECSA Travel Award 2022
- Blue Waters allocation award (1 million node hours), Co-PI for *Response in climate and weather extremes to increasing atmospheric carbon dioxide in the High-Resolution Community Earth System Model (CESM)* 2019
- University of Illinois Graduate College Dissertation Completion Fellowship (\$20,000) 2017
- Blue Waters allocation award (500,000 node hours), Co-PI for *Simulating tropical cyclone-climate interactions under anthropogenic global warming using high-resolution configurations of the Community Earth System Model (CESM)* 2017
- Blue Waters allocation award (50,000 node hours), Co-PI for *Assessing CESM scalability for hierarchical model ensembles* 2017
- Honorable Mention for Ogura Outstanding Student Research Paper Award 2017
- Blue Waters allocation award (660,000 node hours), Co-PI for *Analyzing tropical cyclone-climate interactions using the Community Earth System Model (CESM)* 2016
- Ogura Outstanding Student Research Paper Award 2016
- Focal Point project grant for *Climate Action Policies and International Policy Negotiations* Graduate College, University of Illinois at Urbana-Champaign 2015-2016
- National Science Foundation (NSF) Student Travel Award, 2015 Aegean Conference 2015
- Best Student Presentation Award, 2015 Aegean Conference 2015
- Best Student Research Poster Award (First Place), School of Earth, Society and Environment Research Review 2015
- Blue Waters allocation award (50,000 node hours), Co-PI for *Scaling the Community Earth System Model (CESM) to ultra-high resolutions for analyzing tropical cyclone-climate feedbacks* 2015
- National Scholarship (top %1) 2010-2011
- First-class Scholarship for Excellent Academic Performance (top 4%) 2009-2012
- The Honor of Outstanding Student 2009-2013
- The Honor of Outstanding Volunteer 2011-2012

SERVICE AND OUTREACH

- Reviewer for Geophysical Research Letters, Climate Dynamics, Journal of Climate, Journal of Geophysical Research-Oceans, Journal of Geophysical Research-Atmosphere, Meteorological Applications, Ocean Modeling, International Journal of Climatology
- Panel Reviewer for NASA ROSES-22 A.22-WEATHER Uncertainty Proposal Call
- Guest Editor for Geosciences Special Issue "Sea Ice-Ocean Interaction and Their Impacts on Climate" 2021-2023
- Session Convener for AGU Fall Meeting 2023
- Research Mentor for "Significant Opportunities in Atmospheric Research and Science (SOARS)" (2023)
- Certificate in NCAR Early Career Leadership Program 2023

- CESM tutorial committee member 2022-present
- Board member of Chinese American Oceanic and Atmospheric Association 2022-present
- Organizer of the Atmosphere, Ocean, climate dynamics seminar series at Yale University 2019
- Invited lecture for GG/535 (Topics on Tropical Meteorology and Oceanography) in the Department of Geology and Geophysics at Yale 2019
- - Invited lecture for NPRE/483 (Energy and Security) in the Department of Nuclear, Plasma, and Radiological Engineering of University of Illinois at Urbana-Champaign – A short introduction to climate models 2016
- - Invited lecture for ATMS/509 (Risk Analysis) in the Department of Atmospheric Sciences of University of Illinois at Urbana-Champaign 2016
- - Secretary General of the Department of Atmospheric Sciences Student Organization 2014-2015
- - Student Representative in Academics Committee, Department of Atmospheric Sciences 2015
- - Participant in the National Center for Atmospheric Research Advanced Study Program (NCAR ASP) Summer Colloquium: Uncertainty in climate change research 2014
- - Volunteer of the 4th International Blue Economy Summit Forum 2012
- Member of American Geophysical Union
- Member of American Meteorological Society