

Curriculum Vitae – Wei Mei (updated on 07/25/2022)

a) Personal Information

- Address: Department of Earth, Marine and Environmental Sciences, UNC Chapel Hill
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- Email: wmei@email.unc.edu Phone: 919-962-0173
- Google Scholar page: <https://scholar.google.com/citations?user=D783OFsAAAAJ&hl=en>

b) Research Interests

Tropical cyclones and convection; Atmospheric rivers; Ocean-atmosphere interactions; Atmosphere, ocean and climate dynamics; Global and regional climate variability, predictability and change

c) Education

- **Ph.D.** in Earth System Science (Specialty: Physical Climate), University of California at Irvine, Irvine, CA, 12/2012
Dissertation Title: Impacts of tropical cyclones on the upper-ocean heat content
Dissertation Committee: Prof. Francois Primeau (UC Irvine; Chair)
Prof. Gudrun Magnusdottir (UC Irvine)
Prof. James C. McWilliams (UCLA)
Prof. Claudia Pasquero (University of Milan, Italy)
Prof. Jin-Yi Yu (UC Irvine)
- **M.S.** in Earth System Science, University of California at Irvine, Irvine, CA, 06/2009
- **M.S.** in Meteorology, Nanjing University, Nanjing, China, 06/2007
Thesis Title: Submonthly variability over the East Asian summer monsoon region: A comparative study of South China and Central China
Advisor: Prof. Xiu-Qun Yang
- **B.S.** in Atmospheric Sciences, Nanjing University, Nanjing, China, 06/2004

d) Professional Experience

- Assistant Professor, Department of Earth, Marine and Environmental Sciences, University of North Carolina at Chapel Hill, Chapel Hill, NC, 07/2021–present
[My work permit was not approved on time because of the slow processing during the COVID-19 pandemic, and consequently I was not able to work during 07/12/2021–02/23/2022.]
- Assistant Professor, Department of Marine Sciences, University of North Carolina at Chapel Hill, Chapel Hill, NC, 07/2016–06/2021
- Postdoctoral Scholar, Scripps Institution of Oceanography, University of California at San Diego, La Jolla, CA, 12/2012–06/2016

e) Honors and Awards

- NSF Faculty Early Career (CAREER) Award, National Science Foundation, 2021–2026
- Rajkumar Faculty Fellowship, Carolina Asia Center, UNC Chapel Hill, 2021

- Course Development Grant, Carolina Asia Center, UNC Chapel Hill, 2020
- Scientific Teaching Fellow, Summer Institute on Scientific Teaching, UNC Chapel Hill, 2017
- Research featured on the cover and website of *Nature Geoscience*, and covered by nearly 60 media outlets worldwide, including *ABC Radio Australia*, *CBS News*, *Climate Central*, *New Scientist*, *New York Times*, *Scientific American*, *The Guardian*, *The Sydney Morning Herald*, *The Verge*, and *The Weather Channel*, 2016
- Research highlighted on the website of the American Association for the Advancement of Science *AAAS.org*, and covered by around 20 media outlets worldwide, including *Climate Central*, *Science News*, *Smithsonian*, and *The Sydney Morning Herald*, 2015
- Research highlighted by the U.S. Climate Variability and Predictability Program (CLIVAR) website, 2015
- Research highlighted by the *Proceedings of the National Academy of Sciences of the United States of America* (PNAS) with a commentary by Dr. Ryan Sriver, 2013
- Research selected as Editor's Highlight by *Geophysical Research Letters* (GRL), 2012
- Earth and Space Science Fellowship, NASA, 2010–2012
- School of Physical Sciences Faculty Endowed Fellowship, UC Irvine, 2011–2012
- Earth System Science Fellowship, UC Irvine, 2007–2008
- Outstanding Graduate Student Fellowship, Nanjing University, 2005
- Zeng Xianzi Scholarship, Zeng Xianzi Education Foundation, 2003
- Guanghua Fellowship, Guanghua Education Foundation, 2001 and 2003
- Renmin Fellowship, Nanjing University, 2001–2003

f) Refereed Publications (Underlined names indicate student co-authors)

Mei, W., and S. Li, **2022**: Variability and predictability of basin-wide and sub-basin tropical cyclone genesis frequency in the Northwest Pacific. *Journal of Climate*, accepted on 5/16/2022.

Li, S., **W. Mei**, and S.-P. Xie, **2022**: Effects of tropical sea surface temperature variability on Northern Hemisphere tropical cyclone genesis. *Journal of Climate*, 35, doi:10.1175/JCLI-D-21-0084.1.

Li, C., **W. Mei**, and Y. Kamae, **2022**: A cluster analysis of cold-season atmospheric river tracks over the North Atlantic and their linkages to extreme precipitation and winds. *Climate Dynamics*, doi:10.1007/s00382-022-06297-y.

Li, C., **W. Mei**, and Y. Kamae, **2021**: Variability and predictability of cold-season North Atlantic atmospheric river occurrence frequency in a set of high-resolution atmospheric simulations. *Climate Dynamics*, 58, doi:10.1007/s00382-021-06017-y.

Kamae, Y., Y. Imada, H. Kawase, and **W. Mei**, **2021**: Atmospheric rivers bring more frequent and intense extreme rainfall events over East Asia under global warming. *Geophysical Research Letters*, 48, doi:10.1029/2021GL096030.

- Ryu, Y., H. Moon, J. Kim, T.-J. Kim, K.-O. Boo, B. Guan, Y. Kamae, **W. Mei**, C. Park, S.-W. Son, **2021**: A multi-inventory ensemble analysis of the effects of atmospheric rivers on precipitation and streamflow in the Namgang-dam basin in Korea. *Water Resources Research*, 57, doi:10.1029/2021WR030058.
- Naoi, M., Y. Kamae, H. Ueda, and **W. Mei**, **2020**: Impacts of seasonal transitions of ENSO on atmospheric river activity over East Asia. *Journal of the Meteorological Society of Japan, Ser. II*, 98, 655–668, doi:10.2151/jmsj.2020-027.
- Zhang, J., Y. Lin, D. R. Chavas, and **W. Mei**, **2019**: Tropical cyclone size determined from its induced cold wake. *Geophysical Research Letters*, 46, doi:10.1029/2019GL083783.
- Kamae, Y., **W. Mei**, and S.-P. Xie, **2019**: Ocean warming pattern effects on future changes in East Asian atmospheric rivers. *Environmental Research Letters*, 14, doi:10.1088/1748-9326/ab128a.
- Mei, W.**, Y. Kamae, S.-P. Xie, and K. Yoshida, **2019**: Variability and predictability of North Atlantic hurricane frequency in a large ensemble of high-resolution atmospheric simulations. *Journal of Climate*, 32, 3153–3167, doi:10.1175/JCLI-D-18-0554.1.
- Hu, K., J. C. L. Chan, G. Huang, G. Chen, and **W. Mei**, **2018**: A train-like extreme multiple tropical cyclogenesis event in the northwest Pacific in 2004. *Geophysical Research Letters*, 45, 8529–8535, doi:10.1029/2018GL078749.
- Kamae, Y., **W. Mei**, and S.-P. Xie, **2017**: Climatological Relationship between Warm Season Atmospheric Rivers and Heavy Rainfall over East Asia. *Journal of the Meteorological Society of Japan. Ser. II*, 95, 411–431, doi:10.2151/jmsj.2017-027.
- Kamae, Y., **W. Mei**, S.-P. Xie, M. Naoi, and H. Ueda, **2017**: Atmospheric rivers over the Northwestern Pacific: Climatology and interannual variability. *Journal of Climate*, 30, 5605–5619, doi:10.1175/JCLI-D-16-0875.1.
- Barcikowska, M., F. Feser, W. Zhang, and **W. Mei**, **2017**: Changes in intense tropical cyclone activity for the western North Pacific during the last decades derived from a regional climate model simulation. *Climate Dynamics*, 49, 2931–2949, doi:10.1007/s00382-016-3420-0.
- Mei, W.**, and S.-P. Xie, **2016**: Intensification of landfalling typhoons over the northwest Pacific since the late 1970s. *Nature Geoscience*, 9, 753–757, doi:10.1038/NGEO2792.
- Mei, W.**, S.-P. Xie, F. Primeau, J. C. McWilliams, and C. Pasquero, **2015**: Northwestern Pacific typhoon intensity controlled by changes in ocean temperatures. *Science Advances*, 1, e1500014, doi:10.1126/sciadv.1500014.
- Mei, W.**, C.-C. Lien, I.-I. Lin, and S.-P. Xie, **2015**: Tropical cyclone-induced ocean response: A comparative study of the South China Sea and tropical Northwest Pacific. *Journal of Climate*, 28, 5952–5968, doi:10.1175/JCLI-D-14-00651.1.
- Mei, W.**, S.-P. Xie, M. Zhao, and Y. Wang, **2015**: Forced and internal variability of tropical cyclone track density in the western North Pacific. *Journal of Climate*, 28, 143–167, doi:10.1175/JCLI-D-14-00164.1.

- Mei, W.,** S.-P. Xie, and M. Zhao, **2014:** Variability of tropical cyclone track density in the North Atlantic: Observations and high-resolution simulations. *Journal of Climate*, 27, 4797–4814, doi:10.1175/JCLI-D-13-00587.1.
- Mei, W.,** F. Primeau, J. C. McWilliams, and C. Pasquero, **2013:** Sea surface height evidence for long-term warming effects of tropical cyclones on the ocean. *Proceedings of the National Academy of Sciences of the United States of America*, 110, 15207–15210, doi:10.1073/pnas.1306753110.
- Mei, W.,** and C. Pasquero, **2013:** Spatial and temporal characterization of sea surface temperature response to tropical cyclones. *Journal of Climate*, 26, 3745–3765, doi:10.1175/JCLI-D-12-00125.1.
- Mei, W.,** C. Pasquero, and F. Primeau, **2012:** The effect of translation speed upon the intensity of tropical cyclones over the tropical ocean. *Geophysical Research Letters*, 39, L07801, doi:10.1029/2011GL050765.
- Mei, W.,** and C. Pasquero, **2012:** Restratification of the upper ocean after the passage of a tropical cyclone: A numerical study. *Journal of Physical Oceanography*, 42, 1377–1401, doi:10.1175/JPO-D-11-0209.1.
- Han, G., J. He, and **W. Mei**, **2008:** MCS and moisture analysis on a torrential rain during the Meiyu season of the Yangtze-Huaihe River Basin in 2003. *Scientia Meteorologica Sinica* (in Chinese with English abstract), 28, 649–654.
- Mei, W.,** and X.-Q. Yang, **2005:** Trends of precipitation variations in the mid-lower Yangtze River Valley of China. *Journal of Nanjing University (natural sciences)* (in Chinese with English abstract), 41, 577–589.

g) Teaching Activities

- **As an instructor:**

Instructor for ENEC/GEOL/MASC415: *Environmental Systems Modeling*, UNC Chapel Hill, Spring 2021

Instructor for ENEC/GEOL/MASC415: *Environmental Systems Modeling*, UNC Chapel Hill, Spring 2020

Instructor for MASC052: *First-Year Seminar: Living with Our Oceans and Atmosphere*, UNC Chapel Hill, Fall 2019

Instructor for ENEC/GEOL/MASC415: *Environmental Systems Modeling*, UNC Chapel Hill, Spring 2019

Instructor for MASC052: *First-Year Seminar: Living with Our Oceans and Atmosphere*, UNC Chapel Hill, Fall 2018

Instructor for ENEC/GEOL/MASC415: *Environmental Systems Modeling*, UNC Chapel Hill, Spring 2018

Instructor for MASC052: *First-Year Seminar: Living with Our Oceans and Atmosphere*, UNC Chapel Hill, Fall 2017

Instructor for ENEC/GEOL/MASC415: *Environmental Systems Modeling*, UNC Chapel Hill, Spring 2017

- **As a guest lecturer:**

Guest Lecturer for MASC506: *Physical Oceanography* instructed by Prof. John Bane, UNC Chapel Hill, Fall 2018

Guest Lecturer for SIO235: *Ocean-Atmosphere Interaction* instructed by Prof. Shang-Ping Xie, Scripps Institution of Oceanography, UC San Diego, Spring 2015

Guest Lecturer for SIO235: *Ocean-Atmosphere Interaction* instructed by Prof. Shang-Ping Xie, Scripps Institution of Oceanography, UC San Diego, Spring 2014

Guest Lecturer for SIO217C: *Atmosphere and Climate Sciences III: Climate* instructed by Prof. Joel Norris, Scripps Institution of Oceanography, UC San Diego, Spring 2013

Guest Lecturer for EarthSS1: *Physical Environment* instructed by Prof. Todd Dupont, UC Irvine, Fall 2009

- **Graduate students supervised:**

Ph.D. students:

Jianing Chen, Ph.D. student, starting in August 2022.

Shuo Li, Ph.D. student (2018–present), dissertation title: “Effects of sea surface temperature variability on tropical cyclone genesis frequency”, expected to complete in May 2023.

M.S. students:

Gibson Leavitt, M.S. student (2022–present; co-advised with Dr. Alberto Scotti).

Chuxuan Li, M.S. (2017–2020), thesis title: “Variability and predictability of cold-season atmospheric river activity over the North Atlantic”, completed in May 2020.

Wenjing Liu, M.S. (2017–2020), thesis title: “Diversity of the Pacific-Japan pattern and its influences on Northwest Pacific tropical cyclone activity”, completed in May 2020.

- **Supervisory committees:**

Taylor Asher, Ph.D. (2018–2022), dissertation title: “An assessment of uncertainties in coastal flooding”, completed in May 2022.

John Ratcliff, M.S. (2018–2022), thesis title: “Analysis of wind and storm surge of Hurricane Florence”, completed in May 2022.

Saulo Mendes, Ph.D. (2017–2020), dissertation title: “On the statistics of oceanic rogue waves in finite depth: exceeding probabilities, physical constraints and extreme value theory”, completed in July 2020.

- **Undergraduate students supervised:**

Tyler Dennis, majoring in Environmental Science at UNC, January 2022–present

Davion Huggins, majoring in Atmospheric Science and Meteorology at North Carolina Agricultural and Technical State University, May 2022–present

h) Professional Service

- Book proposal reviewer for Elsevier, 2022–present

- Served on the Editorial Board of Atmospheric Science as Review Editor for *Frontiers in Earth Science*, *Frontiers in Environmental Science*, and *Frontiers in Physics*, 2021–present
- Served as an American Geophysical Union (AGU) point of contact for press inquiries on the science of hurricanes and their possible impacts during the Atlantic hurricane seasons, 2017–present
- Proposal reviewer and panelist for NSF, 2017–present
- Article reviewer for over 35 scientific journals, 2012–present: *Advances in Atmospheric Sciences*, *Atmosphere*, *Atmospheric Research*, *Atmospheric Science Letters*, *Bulletin of the American Meteorological Society*, *Climate Dynamics*, *Climatic Change*, *Deep-Sea Research Part I*, *Geophysical Research Letters*, *Geoscience Letters*, *International Journal of Climatology*, *ISPRS International Journal of Geo-Information*, *Journal of Applied Meteorology and Climatology*, *Journal of Atmospheric and Solar-Terrestrial Physics*, *Journal of Climate*, *Journal of Geophysical Research-Atmospheres*, *Journal of Geophysical Research-Oceans*, *Journal of Marine Systems*, *Journal of Operational Oceanography*, *Journal of the Meteorological Society of Japan*, *Meteorological Applications*, *Meteorology and Atmospheric Physics*, *Monthly Weather Review*, *Nature*, *Nature Communications*, *Nature Geoscience*, *Ocean Science*, *Oceanography*, *Proceedings of the National Academy of Sciences of the United States of America*, *Progress in Oceanography*, *Pure and Applied Geophysics*, *Quarterly Journal of the Royal Meteorological Society*, *Science Advances*, *Scientific Online Letters on the Atmosphere*, *Scientific Reports*, and *Stochastic Environmental Research and Risk Assessment*
- Served on the departmental Diversity, Equity, and Inclusion (DEI) subcommittee (with a focus on summer undergraduate research program expansion), 2020–2021
- Made presentations to prospective students showcasing the research foci and approaches of the groups in physical oceanography in the departmental graduate student recruitment event, 2019, 2020
- Served on the departmental seminar committee, 2018–2021
- Served on the review panel for the departmental Marine Science Graduate Awards, 2018
- Served on the selection committee for Foreign Language and Area Studies (FLAS) Fellowships, UNC Carolina Asia Center, 2021
- Served as an expert spokesperson for Climate Nexus (a non-profit communications organization) for press inquiries on the climate change links to tropical cyclone activity in the Northwest Pacific, 2020–2021
- Co-chaired (with Dr. Chun-Chieh Wu) Asia Oceania Geosciences Society (AOGS) session, “The Science and Prediction of Tropical Cyclones”. AOGS 15th Annual Meeting, Honolulu, HI, 2018
- Co-moderated a panel discussion (with Dr. Brian Blanton, Dr. Slava Lyubchich, and Dr. Hans Kaper) on Climate and Risk. Program on Mathematical and Statistical Methods for Climate and the Earth System (CLIM) Opening Workshop, Durham, NC, 2017
- Co-convened and co-chaired (with Dr. Ryan Sriver and Dr. I-I Lin) American Geophysical Union session (AGU) session, “Tropical Cyclones and Climate on all Timescales”. AGU Fall Meeting, San Francisco, CA, 2015