

Jiawei Bao

Max Planck Institute for Meteorology, Germany
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EMPLOYMENT

2019 - now Post-doctoral Researcher, Max Planck Institute for Meteorology, Germany
Research interest: Tropical convection and dynamics, clouds

EDUCATION

2015 - 2019 Ph.D. in Climate Science, University of New South Wales, Australia
Thesis title: Understanding extreme precipitation and its link with convective organization.
Advisor: Prof. Steven Sherwood

2012 - 2015 M.Sc. in Global Environment Change, Beijing Normal University, China
Thesis title: Dynamical downscaling simulation and future projection of precipitation over China.
Advisor: Prof. Jinming Feng

2008 - 2012 B.Sc in Atmospheric Science, Nanjing University of Information Science and Technology, China

SCHOLARSHIPS AND AWARDS

2023 IST-bridge Marie Curie postdoctoral fellowship, Institute of Science & Technology Austria

2022 Award for outstanding early career presentation in GEWEX 3rd Pan-Gass meeting Understanding and Modeling Atmospheric Processes

2020 Uwe Radok Award for Best PhD thesis from Australian Meteorological & Oceanographic Society (AMOS)

2019 Chinese government award for outstanding students abroad (300 globally across all the disciplines)

2018 Award for best published paper by a student from ARC centre of excellence for climate extremes

2017 *Journal of Advances in Modeling Earth Systems* editor's highlight of the paper: The robust relationship between extreme precipitation and convective organization in idealized numerical modeling simulations.

2015 TFS PhD scholarship , University of New South Wales

2015 Laureate Fellowship top-up PhD scholarship, University of New South Wales

PROFESSIONAL ACTIVITIES

- Current Reviewer for *Nature Geosciences*, *Science Advances*, *Journal of Advances in Modeling Earth Systems*, *Journal of Climate*, *Geophysical Research Letters*, *Weather and Climate Extremes*, *International Journal of Climatology*
- Current Primary supervisor: Abisha Ganaraj (PhD in University of Hamburg/IMPRS, starting from 2021.10)
Topic: Impact of earth's rotation on radiation, circulation and climate sensitivity
- 2023 Guest lecturer for a graduate course in University of Hamburg: Tropical clouds and convection
- 2021 Co-supervisor: Laura Hasbini (six-month Intern program)
Topic: Relative humidity distribution in CMIP6 simulations
- 2020-2021 Teaching assistant for a graduate course in University of Hamburg: The trade winds
- 2019-2020 MPI atmospheric department internal seminar coordinator

CONFERENCES AND WORKSHOPS

3rd GEWEX Pan-Gass meeting (talk/Monterey, USA 2022), CFMIP (talk/Seattle, USA 2022), EGU (talk/Vienna Austria 2022), CFMIP (poster/Virtual 2021), Workshop on spatial organization of convection, clouds and precipitation (poster/Virtual 2021), 2nd ICTP Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics (2019/Trieste, Italy 2019), CFMIP (poster/Boulder, USA 2018), CLEX extreme rainfall workshop (talk/Sydney, Australia 2018), ARCCSS Convection workshop (talk/Melbourne, Australia 2018), The 2nd Pan-Gass conference (poster/Lorne, Australia 2018), Convection permitting modeling workshop (poster/ Boulder, USA 2016), EGU (poster/Vienna, Austria 2014)

INVITED PRESENTATIONS

- 2023 Talk at the tropical lapse rate workshop, Paris
- 2023 Seminar at Leibniz Centre for Tropical Marine Research (ZMT)
- 2022 Seminar at UCLA (virtual)
- 2022 Talk in the convection session, European Geosciences Union (EGU)
- 2021 Seminar at UT Austin Climate Physics course (virtual)
- 2020 Talk at Program on Climate Change Summer Institute, University of Washington (virtual)
- 2018 Seminar at School of Earth, Atmosphere & Environment, Monash University

PUBLICATIONS

Schmidt, H., **Bao, J.** et al. Effects of vertical grid spacing on the climate simulated in a global storm-resolving model. *In preparation.*

- Bao, J.**, Steves B., Kluft, L., & Muller, C. Intensification of tropical precipitation extremes from more organized convection. *Submitted*.
- Hohenegger, C. et al. (including **Bao J.**) (2023) ICON-Sapphire: simulating the components of the Earth System and their interactions at kilometer and subkilometer scales. *Geoscientific Model Development*. <https://doi.org/10.5194/gmd-16-779-2023>
- Windmiller, J., **Bao, J.**, Sherwood, S. C., & Schanzer, T. (2023) Predicting convective downdrafts from updrafts and environmental conditions in a global storm resolving simulation. *Journal of Advances in Modeling Earth Systems*. <https://doi.org/10.1029/2022MS003048>
- Bao, J.**, Dixit, V., Sherwood, S. C. (2022) Zonal temperature gradients in the tropical free troposphere. *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-22-0145.1>
- Bao, J.**, Stevens, B. Kluft, L. & Jimenez-de-la-Cuesta, D. (2021) Changes in the tropical lapse rate due to entrainment and their impact on climate sensitivity. *Geophysical Research Letters*. <https://doi.org/10.1029/2021GL094969>
- Keil, P., Schmidt, H, Stevens, B. & **Bao, J.** (2021) Variations of tropical lapse rates in climate models and their implications for the upper tropospheric warming. *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-21-0196.1>
- Bao, J.**, Stevens, B. Kluft, L. & Jimenez-de-la-Cuesta, D. (2021) Changes in the tropical lapse rate due to entrainment and their impact on climate sensitivity. *Geophysical Research Letters*. <https://doi.org/10.1029/2021GL094969>
- Bao, J.** & Windmiller, J. M. (2021) Impact of microphysics on tropical precipitation extremes in a global storm-resolving model. *Geophysical Research Letters*. <https://doi.org/10.1029/2021GL094206>
- Bao, J.** & Sherwood, S. C. (2019). The role of convective self-aggregation in extreme instantaneous vs. daily precipitation. *Journal of Advances in Modeling Earth Systems*. <https://doi.org/10.1029/2018MS001503>
- Bao, J.**, Sherwood, S. C., Alexander, L. V., & Evans, J. P. (2018). Comments on ‘Temperature-extreme precipitation scaling: a two-way causality?’ *International Journal of Climatology*. <https://doi.org/10.1002/joc.5665>
- Bao, J.**, Sherwood, S. C., Colin, M., & Dixit, V. (2017). The robust relationship between extreme precipitation and convective organization in idealized numerical modeling simulations. *Journal of Advances in Modeling Earth Systems*, 9, 2291–2303. <https://doi.org/10.1002/2017MS001125> (chosen to be editor’s highlight)
- Bao, J.**, Sherwood, S. C., Alexander, L. V., & Evans, J. P. (2017). Future increases in extreme precipitation exceed observed scaling rates. *Nature Climate Change*, 7, 128-132. <https://doi.org/10.1038/nclimate3201>.
- Bao, J.**, & Feng, J. (2016). Intercomparison of CMIP5 simulations of summer precipitation, evaporation, and water vapor transport over Yellow and Yangtze River basins. *Theoretical and applied climatology*, 123(3-4), 437-452.

Bao, J., Feng, J., & Wang, Y. (2015). Dynamical downscaling simulation and future projection of precipitation over China. *Journal of Geophysical Research: Atmospheres*, 120(16), 8227-8243.