

# Jiawei Bao

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## EMPLOYMENT

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2023 - now	IST-bridge Marie Curie postdoctoral fellow, Institute of Science and Technology, Austria
2019 - 2023	Postdoctoral Researcher, Max Planck Institute for Meteorology, Germany

## EDUCATION

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2015 - 2019	Ph.D. in Climate Science, University of New South Wales, Australia <i>Advisor: Prof. Steven Sherwood</i>
2012 - 2015	M.Sc. in Climate Science, Beijing Normal University, China <i>Advisor: Prof. Jinming Feng</i>
2008 - 2012	B.Sc in Atmospheric Science, Nanjing University of Information Science and Technology, China

## AWARDS

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2023-2025	IST-bridge Marie Curie postdoctoral fellowship
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	<i>Journal of Advances in Modeling Earth Systems</i> 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

## PUBLICATIONS

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### In preparation

**Bao, J.**, Bony, S. & Takasuka, D. Tropical wide oscillations

Risi, C. & co-authors including **Bao J.** : Temperature lapse rate in the tropical and subtropical troposphere and along mountain slopes: present, past, future

Gnanaraj A., **Bao, J.** & Schmidt H. Impacts of rotation rates on earth's radiation and climate

### Submitted

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

**Bao, J.**, Stevens B., Kluft, L., & Muller, C. Intensification of tropical precipitation extremes from more organized convection. *In revision*

Hu, Y., Lin Y., Deng Y., & **Bao, J.** Summer Extreme Rainfall over the Middle and Lower Reaches of Yangtze River: Role of Synoptic Patterns in Historical Changes and Future Projection. *In revision*

### 2023

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>

### 2022

**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>

### 2021

**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>

## Before 2019

- 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.

## PROFESSIONAL ACTIVITIES

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Current	Reviewer for <i>Nature Geosciences</i> , <i>Science Advances</i> , <i>Journal of Advances in Modeling Earth Systems</i> , <i>Journal of Climate</i> , <i>Geophysical Research Letters</i> , <i>Weather and Climate Extremes</i> , <i>International Journal of Climatology</i>
Current	Primary supervisor: Abisha Ganaraj (PhD in University of Hamburg/IMPRS, starting from 2021.10) <i>Topic: Impact of earth’s rotation on radiation, circulation and climate sensitivity</i>
2023	Guest lecturer for a graduate course in University of Hamburg: Tropical clouds and convection
2021	Co-supervisor: Laura Hasbini (six-month Intern program) <i>Topic: Relative humidity distribution in CMIP6 simulations</i>

2020-2021 Teaching assistant for a graduate course in University of Hamburg: The trade winds  
 2019-2020 MPI atmospheric department internal seminar coordinator

## CONFERENCES SEMINARS AND WORKSHOPS

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2023

**3rd workshop on spatial organization of convection, clouds and precipitation.** Talk  
 Intensification of tropical precipitation extremes from more organized convection.  
**CFMIP-GASS** Poster  
 Tropical-wide oscillations: RCE or MJO?  
**Tropical lapse rate workshop** Invited Talk  
 The thermal structure of tropical troposphere

2022

**UCLA (virtual)** Invited seminar  
**3rd GEWEX Pan-Gass meeting** Talk  
 Intensification of tropical precipitation extremes from more organized convection  
**CFMIP** Talk  
 Zonal temperature gradients in the tropical free-troposphere  
**EGU** Invited talk  
 Zonal temperature gradients in the tropical free-troposphere

2021

**UT Austin Climate Physics (virtual)** Invited seminar  
**MPI-Meteorology** seminar  
**CFMIP** Poster  
**1st Workshop on spatial organization of convection, clouds and precipitation.** Poster

2020

**Program on Climate Change Summer Institute, University of Washington (virtual).**  
 Invited talk

2019

**2nd ICTP Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics**

2018

**Monash University** Invited seminar  
**CFMIP** Poster

**The 2nd GEWEX Pan-Gass meeting**

Poster

2016

**Convection permitting modeling workshop**

Poster