

## Jun Hu

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### CONTACT INFORMATION

Xiping Building C3-410-1  
College of Ocean and Earth Sciences  
Xiamen University  
Xiamen, Fujian 361102, China

*Phone:* +86-592-2182374  
*Fax:* +86-592-2183064  
*Email:* hujun@xmu.edu.cn  
*Website:* www.junhu.info

### RESEARCH INTERESTS

Stable water isotopes, Paleoclimate and paleoceanography, large-scale air-sea interactions, climate dynamics

### APPOINTMENTS

12/2021-PRESENT **Xiamen University**, Xiamen, China  
*Associate Professor*

09/2019-12/2021 **Rice University**, Houston, TX  
*Postdoctoral Research Fellow*  
Advisor: Sylvia Dee

### EDUCATION

08/2014-07/2019 **University of Southern California**, Los Angeles, CA  
*Ph.D. in Earth Sciences*  
Advisor: Julien Emile-Geay

09/2011-07/2014 **Institute of Atmospheric Physics, Chinese Academy of Sciences**, Beijing, China  
*Master of Science in Meteorology*  
Advisor: Anmin Duan

08/2007-06/2011 **Lanzhou University**, Lanzhou, China  
*Bachelor of Science in Atmospheric Sciences*

### PUBLICATIONS

PAPERS IN REVISION [1] **Hu, J.\***, S. Dee, G. Parajuli, K. Thirumalai: ENSO modulation of the Asian Summer Monsoon in Last2k paleoclimate data assimilation reconstructions. *Journal of Climate*.

[2] **Hu, J.**, J. Emile-Geay, B. Goswami, Y. Ait Brahim, J. Partin, A. Jame, and S. Stevenson: Evidence for a Non-Global 4.2ka event in Asian speleothems. *Proceedings of the National Academy of Sciences of the United States of America*.

PUBLISHED PAPERS [3] Zhang, P., A. Duan, **J. Hu**, 2022: Combined effect of the tropical Indian Ocean and tropical North Atlantic sea surface temperature anomaly on the Tibetan Plateau precipitation anomaly in late summer. *Journal of Climate*, 35, 3899-3918, doi:10.1175/JCLI-D-21-0990.1.

[4] Tang, Y., A. Duan, **J. Hu**, 2022: Surface heating over the Tibetan Plateau associated with the Antarctic Oscillation. *Journal of Geophysical Research: Atmospheres*, 127, e2022JD036851, doi:10.1029/2022JD036851.

- [5] **Hu, J.\***, Y. Yan\*, L. Yeung, S. Dee, 2022: Sublimation origin of negative deuterium excess observed in snow and ice samples from McMurdo Dry Valleys and Allan Hills Blue Ice Areas, East Antarctica. *Journal of Geophysical Research: Atmospheres*, 127, e2021JD035950, doi:10.1029/2021JD035950.
- [6] Man, W., T. Zhou, J. Jiang, M. Zuo, **J. Hu**, 2022: Moisture sources and climatic controls of precipitation stable isotopes over the Tibetan Plateau in water-tagging simulations. *Journal of Geophysical Research: Atmospheres*, 127, e2021JD036321, doi:10.1029/2021JD036321.
- [7] **Hu, J.\***, A. Bailey, J. Nusbaumer, S. Dee, C. Sasser, J. Worden, 2022: Tracking shallow convective mixing and its influence on low-level clouds with stable water isotopes. *Journal of Geophysical Research: Atmospheres*, 127, e2021JD035355, doi:10.1029/2021JD035355.
- [8] **Hu, J.\***, S. Dee, C. Wong, C. J. Harman, J. L. Banner, K. E. Bunnell, 2021: Assessing proxy system models of cave dripwater  $\delta^{18}\text{O}$  variability. *Quaternary Science Review*, 254, 106799, doi: 10.1016/j.quascirev.2021.106799.
- [9] Comas-Bru, L., K. Rehfeld, C. Roesch, S. Amirnezhad-Mozhdehi, S. P. Harrison, K. Atsawawaranunt, S. M. Ahmad, Y. Ait Brahim, A. Baker, M. Bosomworth, S. F. M. Breitenbach, Y. Burstyn, A. Columbu, M. Deininger, A. Demeny, B. Dixon, J. Fohlmeister, I. G. Hatvani, **J. Hu**, N. Kaushal, Z. Kern, I. Labuhn, F. A. Lechleitner, A. Lorrey, B. Martrat, V. F. Novello, J. Oster, C. Pérez-Mejías, D. Scholz, N. Scroxton, N. Sinha, B. M. Ward, S. Warken, H. Zhang, and SISAL Working Group members, 2020: SISALv2: A comprehensive speleothem isotope database with multiple age-depth models. *Earth System Science Data*, 12, 2579-2606, doi:10.5194/essd-12-2579-2020.
- [10] **Hu, J.\***, S. Dee, J. Nusbaumer, 2020: The role of isotope-enabled GCM complexity in simulating tropical circulation changes in high- $\text{CO}_2$  scenarios. *Journal of Advances in Modeling Earth Systems*, 12, e2020MS002163, doi:10.1029/2020MS002163.
- [11] **Hu, J.\***, J. Emile-Geay, C. Tabor, J. Nusbaumer, and J. Partin, 2019: Deciphering Chinese speleothems with an isotope-enabled climate model. *Paleoceanography and Paleoclimatology*, 34, 2098-2112, doi:10.1029/2019PA003741.
- [12] Comas-Bru, L., et al. (including **J. Hu**), 2019: Evaluating model outputs using integrated global speleothem records of climate change since the last glacial. *Climate of the Past*, 15, 1557-1579, doi:10.5194/cp-15-1557-2019.
- [13] **Hu, J.\***, J. Emile-Geay, J. Nusbaumer, and D. Noone, 2018: Impact of convective activity on precipitation  $\delta^{18}\text{O}$  in isotope-enabled general circulation models. *Journal of Geophysical Research: Atmospheres*, 123, 13,595-13,610, doi:10.1029/2018JD029187.
- [14] Atsawawaranunt, K., L. Comas-Bru, S. A. Mozhdehi, M. Deininger, S. P. Harrison, A. Baker, M. Boyd, N. Kaushal, S. M. Ahmad, Y. A. Brahim, M. Arienzo, P. Bajo, K. Braun, Y. Burstyn, S. Chawchai, W. Duan, I. G. Hatvani, **J. Hu**, Z. Kern, I. Labuhn, M. Lachniet, F. A. Lechleitner, A. Lorrey, C. Pérez-Mejías, R. Pickering, N. Scroxton, and SISAL Working Group members, 2018: The SISAL database: a global resource to document oxygen and carbon isotope records from speleothems. *Earth System Science Data*, 10, 1687-1713, doi:10.5194/essd-10-1687-2018.
- [15] **Hu, J.**, J. Emile-Geay, and J. Partin, 2017: Correlation-based interpretations of paleoclimate data – where statistics meet past climates. *Earth and Planetary Science Letters*, 459, 362-371, doi:10.1016/j.epsl.2016.11.048.

[16] **Hu, J.**, and A. Duan, 2015: Relative contributions of the Tibetan Plateau thermal forcing and the Indian Ocean Sea surface temperature basin mode to the interannual variability of the East Asian summer monsoon. *Climate Dynamics*, 45, 2697-2711, doi:10.1007/s00382-015-2503-7.

[17] Duan, A., Z. Xiao, and **J. Hu**, 2014: Can current AGCMs reproduce historical changes in the atmospheric diabatic heating over the Tibetan Plateau? *Atmospheric and Oceanic Science Letters*, 7(2), 143-148, doi:10.3878/j.issn.1674-2834.13.0084.

[18] Duan, A., **J. Hu**, and Z. Xiao, 2013: The Tibetan Plateau Summer Monsoon in the CMIP5 Simulations. *Journal of Climate*, 26, 7747-7766. doi:10.1175/JCLI-D-12-00685.1.

[19] Liu, Y. M., **J. Hu**, B. He, Q. Bao, A. M. Duan, and G. X. Wu, 2013: Seasonal evolution of subtropical anticyclones in the climate system model FGOALS-s2. *Advances in Atmospheric Sciences*, 30(3), 593-606, doi:10.1007/s00376-012-2154-0.

[20] Luo, J., W. Tian, Z. Pu, P. Zhang, L. Shang, M. Zhang, and **J. Hu**, 2013: Characteristics of stratosphere-troposphere exchange during the Meiyu season. *Journal of Geophysical Research: Atmospheres*, 118, 2058-2072, doi:10.1029/2012JD018124.

[21] Luo, J., W. Tian, P. Zhang, **J. Hu**, F. Xie, 2012: Analysis of the anomalous signals around the tropopause and in the stratosphere before the Meiyu onset (in Chinese). *Acta Meteorologica Sinica*, 70(4): 655-669, doi: 10.11676/qxxb2012.053.

RESEARCH  
HIGHLIGHTS

Eos Research Spotlight: How to Read Atmospheric History Written in Flowstones, Eos, 101, doi:10.1029/2020EO139842.

OTHER  
PUBLICATIONS

Yassine, A. B., **J. Hu**, J. Baker, C. Perez-Mejias, H. Zhang, and L. Comas-Bru, 2020: Exploiting the SISALv2 database for evaluating climate processes. *Past Global Changes Magazine*, vol. 28(1), 27, doi:10.22498/pages.28.1.27.

CITATION  
STATISTICS

Total citations: 492; h-index: 10 (Google Scholar)

**FUNDING**

2021-2023

NSF Paleoclimate Perspectives on Climate Change: “Variability, Impacts & Extremes of the ENSO-Asian Monsoon Relationship over the Common Era.” PIs: Sylvia Dee, **Jun Hu**, Kaustubh Thirumalai, \$294,464.

2020-2021

Lanzhou University, LZUJBKY-2019-KB02, Synergic impact of latent heating and blocking systems on extreme climate events in semi-arid regions, PI, \$3000

**HONORS & AWARDS**

12/2021

Nanqiang Top-notch Young Talents Program-B Level Talent, Xiamen University

03/2018

Teaching Assistant Award, Department of Earth Sciences, USC

10/2016

Best Student Paper Award in COAA-SCC (Chinese-American Oceanic and Atmospheric Association, Southern California Chapter)

06/2016

Adam Fischer International Travel Grant, USC

2014-2019

Dornsife College Merit Fellowship, USC

06/2011	Outstanding student in Chinese Academy of Sciences
11/2010	Scholarship of Chinese Academy of Sciences
10/2010	Outstanding graduate of Lanzhou University
10/2010	Provincial First Prize for China Undergraduate Mathematical Contest in Modeling
11/2009	National Scholarship of China

### TEACHING

**INSTRUCTOR** Xiamen University – Marine Geology (Spring 2023) Xiamen University – Advanced Marine Geology (Spring 2023)

**GUEST LECTURER** Rice University ESCI 114 – Discoveries in Earth, Environmental and Planetary Sciences (lecture: Introduction of Climate Modeling)

Rice University ESCI 111 – Inhabiting Planet Earth (lecture: Introduction of speleothem records)

**TEACHING ASSISTANT** My responsibilities as a *teaching assistant* at USC included teaching weekly laboratory sessions, developing/designing lab session material, grading homework and exams, holding office hours and supervising final projects.

- GEOL150 – Climate Change (Spring 2016 and Spring 2017)
- GEOL157 – The Logic of Climate Change: From Data to Deeds (Spring 2018)
- GEOL351 – Climate Systems (Fall 2015)
- GEOL425 – Data Analysis in the Earth and Environmental Sciences (Fall 2017, 88% of students are graduate students)

**MENTORING** Student advised:

- Yuchen Yang (Xiamen University)  
*Graduate student, Fall 2022-*
- Jinfeng Luo (Xiamen University)  
*Graduate student, Fall 2022-*
- Zeyu Zhou (Xiamen University)  
*Graduate student, Fall 2022-*
- Mitchell Osborn (Rice Computer Sciences)  
*Undergraduate Research Assistant, Fall 2021*
- Laura Goon (Rice Computer Sciences)  
*Undergraduate Research Assistant, Spring 2020*
- John Krone (USC Earth Sciences)  
*Undergraduate Research Assistant, Spring 2018*
- Eric Park (Palos Verdes High School)  
*Summer Internship, Summer 2019*

**TRAINING** I lead two training sessions in the fourth workshop of Speleothem Isotopes Synthesis and AnaLysis (SISAL), teaching the participants to read/extract/analyze a global speleothem dataset.

## CONFERENCE PRESENTATIONS AND WORKSHOPS

### INVITED TALKS

- *Nanjing University*, May, 2020. Department seminar. “East Asian monsoon variability across time scales: A climate modeling perspective”.
- *California Institute of Technology*, November 17th, 2016. GeoClub Speaker. “Correlation-based interpretations of paleoclimate data – where statistics meet past climates”.

### TALKS

- ENSO modulation of the Asian Summer Monsoon in Last2k paleoclimate data assimilation reconstructions. *The 6<sup>th</sup> Xiamen Symposium on Marine Environmental Sciences*, Xiamen, China, January 2023.
- Examination of the influence of shallow convective mixing on low-level clouds with observations of stable water isotopes. *Stable Isotopes: From Weather to Climate workshop*, online, November 2021.
- Tracking shallow convective mixing and its influence on low-level clouds with stable water isotopes. *AGU Fall Meeting*, online, December 2020.
- The role of isotope-enabled GCM complexity in simulating circulation changes in high-CO<sub>2</sub> scenarios. *AGU Fall Meeting*, San Francisco, December 2019.
- Deciphering Chinese speleothems with an isotope-enabled climate model. *U.S. CLIVAR Water isotopes and Climate workshop*, Boulder, CO, October 2019.
- The interpretation of speleothem  $\delta^{18}\text{O}$  in the Asian Monsoon regions: Insights from an isotope-enabled model. *AGU Fall Meeting*, Washington, D.C., December 2018.
- What is Asian speleothem  $\delta^{18}\text{O}$  telling us? Insights from an isotope-enabled model. *The 28<sup>th</sup> Goldschmidt Conference*, Boston, MA, August 2018.
- Impact of convective activity on precipitation  $\delta^{18}\text{O}$  in isotope-enabled models. *AGU Fall Meeting*, New Orleans, LA, December 2017.
- Using LiPD format with speleothem records. *The first workshop of Speleothem Isotopes Synthesis and AnaLysis (SISAL)*, Dublin, Ireland, June 2017.

### POSTERS

- ENSO modulation of the Asian Summer Monsoon in Last2k paleoclimate data assimilation reconstructions. *AGU Fall Meeting*, online, December 2022.
- A coherency analysis of Asian speleothems. *EGU General Assembly*, Vienna, Austria, April 2019.
- Reinterpreting the Crystal Cave speleothem record with statistics, climate models, and proxy system models. *Urbino Summer School in Paleoclimatology*, Urbino, Italy, July 2017.
- Reinterpreting the Crystal Cave speleothem record with statistics, climate models, and proxy system models. *AGU Fall Meeting*, San Francisco, CA, December 2016.
- Blind speleothem calibrations: A cautionary tale from Crystal Cave. *The 26<sup>th</sup> Goldschmidt Conference*, Yokohama, Japan, June 2016.
- An efficient climate model with water isotope physics: NEEMY. *AGU Fall Meeting*, San Francisco, CA, December 2015.

## PROFESSIONAL SERVICE

CONFERENCE CONVENER	Water Isotope Systematics: Improving Modern & Paleoclimate Interpretations, AGU 2021
DATASET COORDINATOR	Regional Coordinator in a Past Global Changes (PAGES) working group – Speleothem Isotopes Synthesis and AnaLysis (SISAL), collecting and control the quality of speleothem records in China
SEMINAR COORDINATOR	Paleoenvironmental Seminar Coordinator (2018-2019) at the Department of Earth Sciences, USC
PAPER REVIEWER	Nature, Nature Geoscience, PNAS, Geology, Geophysical Research Letters, Journal of Climate, Climate of the Past, Journal of Geophysical Research: Atmospheres, Communications Earth & Environment, Journal of Applied Meteorology and Climatology, Advances in Atmospheric Sciences.

## AFFILIATIONS

- American Geophysical Union. 2015-
- American Meteorological Society. 2017-