

Jun Hu

CONTACT INFORMATION

KWGL 305
Department of Earth, Environmental and Planetary Sciences
Rice University
Houston, TX 77005 USA

Phone: (713) 348-5169
Fax: (713) 348-4880
Email: jun.hu@rice.edu
Website: www.junhu.info

RESEARCH INTERESTS

Climate dynamics, hydroclimate variability, monsoon dynamics, water isotope physics, isotope-enabled climate modeling, low order climate models

EDUCATION

- 08/2014-07/2019 **University of Southern California**, Los Angeles, CA
Ph.D. in Earth Sciences
Dissertation: “Flowstone Ideograms: Deciphering the Climate Messages of Asian Speleothems”
Advisor: Julien Emile-Geay
- 09/2011-07/2014 **Institute of Atmospheric Physics, Chinese Academy of Sciences**, Beijing, China
Master of Science in Meteorology
Dissertation: “Synergic impacts of the Indian Ocean and the Tibetan Plateau diabatic heating on the East Asian summer monsoon”
Advisor: Anmin Duan
- 08/2007-06/2011 **Lanzhou University**, Lanzhou, China
Bachelor of Science in Atmospheric Sciences

APPOINTMENTS

- 09/2019-NOW **Rice University**, Houston, TX
Postdoctoral Research Fellow
Advisor: Sylvia Dee
- 08/2014-05/2019 **University of Southern California**, Los Angeles, CA
Research and Teaching Assistant
Ph.D. dissertation (to be) published as [5][7][9][15]; assisted in teaching 4 courses

PUBLICATIONS

- SUBMITTED PAPERS [1] **Hu, J.**, S. Dee, C. Wong, C. J. Harman, J. L. Banner, K. E. Bunnell, 2020: Assessing proxy system models of cave dripwater $\delta^{18}\text{O}$ variability (submitted). *Quaternary Science Review*.
- [2] **Hu, J.**, S. Dee, J. Nusbaumer, 2020: The role of isotope-enabled GCM complexity in simulating tropical circulation changes in high- CO_2 scenarios (accepted). *Journal of Advances in Modeling Earth Systems*.
- [3] Comas-Bru, L., et al. (including **J. Hu**), 2020: SISALv2: A comprehensive speleothem isotope database with multiple age-depth models (in revision). *Earth System Science Data*,

doi:10.5194/essd-2020-39.

- PUBLISHED PAPERS [4] **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.
- [5] 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.
- [6] **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.
- [7] Atsawawaranunt, K., et al. (including **J. Hu**), 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.
- [8] **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.
- [9] **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.
- [10] 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.
- [11] 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.
- [12] 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.
- [13] 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.
- PAPERS IN PREPARATION [14] **Hu, J.**, J. Emile-Geay, N. McKay, Y. A. Brahim, and S. Stevenson: Limited coherency of Asian speleothems over the Holocene, with implications for the Meghalayan age. *Earth and Planetary Science Letter*.
- [15] He, Y., X. Ding, J. Huang, X. Guan, **J. Hu**, and D. Li: Stronger extreme cold events under global warming. *Geophysical Research Letters*.
- RESEARCH HIGHLIGHTS Eos Research Spotlight: How to Read Atmospheric History Written in Flowstones, Eos, 101, doi:10.1029/2020EO139842.

TEACHING

GUEST LECTURER Rice University ESCI 114 – Discoveries in Earth, Environmental and Planetary Sciences (lecture: climate modeling)

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:

- Xinyue Luo (Rice Earth Sciences)
Ph.D. student, Fall 2019-
- 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

- *California Institute of Technology*, November 17th, 2016. GeoClub Speaker. “Correlation-based interpretations of paleoclimate data – where statistics meet past climates”.

TALKS

- The role of isotope-enabled GCM complexity in simulating circulation changes in high-CO₂ 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 28th 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

- 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 26th Goldschmidt Conference*, Yokohama, Japan, June 2016.
- An efficient climate model with water isotope physics: NEEMY. *AGU Fall Meeting*, San Francisco, CA, December 2015.

HONORS, AWARDS, AND GRANTS

03/2018	Teaching Assistant Award (GEOL 425), 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
11/2008	National Scholarship of China

PROFESSIONAL SERVICE

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	Geology, Geophysical Research Letters, Journal of Climate, Climate of the Past, Journal of Geophysical Research: Atmospheres, Journal of Applied Meteorology and Climatology, Advances in Atmospheric Sciences.

AFFILIATIONS

- American Geophysical Union. 2015-
- American Meteorological Society. 2017-
- PAGES – Past Global Changes. 2017-

COMPUTER SKILLS

- Climate models: CESM/iCESM, SPEEDY, FGOALS, WRF, Linear Baroclinic Model
- Languages: Python, Matlab, NCL, Fortran, Linux/Unix shell scripts, MPI parallel processing library.