Jiang Zhu

Department of Earth and Environmental Sciences
University of Michigan
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RESEARCH INTERESTS

Simulating climate of Earth's deep past, Simulating and interpreting water isotopes in paleoclimate records, ENSO variability in the past and future, Dynamics and modeling of oceanic thermohaline circulation, Abrupt climate change, Global climate change and global warming

EDUCATION

Ph.D., Atmospheric and Oceanic Sciences — May 2017
University of Wisconsin-Madison, Madison, WI, USA
Advisor: *Prof.* Zhengyu Liu

M.S. Atmospheric and Oceanic Sciences — Jun 2011
Peking University, Beijing, China
Advisor: *Prof.* Haijun Yang

B.S. Atmospheric Sciences — Jun 2008
Peking University, Beijing, China

RESEARCH EXPERIENCE

Postdoctoral Research Fellow, University of Michigan — June 2017–present
Projects: Simulating climate of Earth's deep past

Graduate Research Assistant, University of Wisconsin-Madison — Aug 2011–May 2017
Projects: Water isotope modeling; ENSO variability at the LGM; Holocene temperature conundrum; Evolution and mechanisms of the AMOC during the last deglaciation

Visiting Scholar, National Center for Atmospheric Research — Jan 2014–Jan 2015
Projects: Developing and testing of the isotope-enabled Community Earth System Model (with focus on the sea ice, ocean, river runoff and the coupler)

PUBLICATIONS

17. **Zhu, J.**, Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong, Variations of the temporal δ^{18}O–temperature slope over Greenland to varied climatic forcings in an isotope-enabled Earth system model, *in preparation*.

16. **Zhu, J.**, Z. Liu, E. Brady, B. Otto-Bliesner, S. Marcott, J. Zhang, X. Wang, J. Nusbaumer, T. Wong, A. Jahn, and D. Noone (2017), Investigating the direct meltwater effect in terrestrial oxygen-isotope records using an isotope-enabled Earth system model, *Geophys. Res. Lett.*, doi:10.1002/2017GL076253.

15. **Zhu, J.**, Z. Liu, E. Brady, B. Otto-Bliesner, J. Zhang, D. Noone, R. Tomas, J. Nusbaumer, and T. Wong, A. Jahn, C. Tabor (2017), Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model, *Geophys. Res. Lett.*, 44(13), 6984–6992, doi:10.1002/2017GL073406.

14. Liu, W., S. Xie, Z. Liu, and **J. Zhu** (2017), Overlooked possibility of a collapsed Atlantic meridional overturning circulation in warming climate, *Science Advances*, 3, e1601666, doi:10.1126/sciadv.1601666. *(news release)*

13. Lu, Z., Z. Liu, and **J. Zhu** (2016), Abrupt intensification of ENSO forced by deglacial ice-sheet retreat in CCSM3, *Climate Dynamics*, 46(5–6), 1877–1891, doi:10.1007/s00382-015-2681-3.

12. Guan, J., Z. Liu, X. Wen, E. Brady, D. Noone, **J. Zhu**, and J. Han (2016), Understanding the temporal slope of the temperature-water isotope relation during the deglaciation using isoCAM3: The slope equation, *J. Geophys. Res. Atmos.*, 121, 10,342–10,354.

11. Wen, X., Z. Liu, S. Wang, J. Chen, and **J. Zhu** (2016), Correlation and Anti-Correlation of the East Asian Summer and Winter Monsoons during the Last 21,000 Years, *Nature Communications*, 7:11999, doi:10.1038/ncomms11999.

10. **Zhu, J.**, Z. Liu, J. Zhang, and W. Liu (2015), AMOC response to global warming: dependence on the background climate and response timescale, *Climate Dynamics*, 44(11–12), 3449–3468.

9. Liu, W., J. Lu, L. R. Leung, S.-P. Xie, Z. Liu, and **J. Zhu (2015)**, The de-correlation of westerly winds and westerly-wind stress over the Southern Ocean during the Last Glacial Maximum, *Climate Dynamics*, 45(11), 3157–3168, doi:10.1007/s00382-015-2530-4.

8. **Zhu, J.**, Z. Liu, X. Zhang, I. Eisenman, and W. Liu (2014), Linear weakening of the AMOC in response to receding glacial ice sheets in CCSM3, *Geophys. Res. Lett.*, 41, 6252–6258.

7. Liu, Z., **J. Zhu**, Y. Rosenthal, X. Zhang, B. Otto-Bliesner, A. Timmermann, R. Smith, G. Lohmann, W. Zheng, O. Timm (2014), The Holocene temperature conundrum, *Proc. Natl. Acad. Sci.*, 111(34), E3501–E3505, doi:10.1073/pnas.1407229111. *(news release)*

6. Nace, T. E., P. A. Baker, G. S. Dwyer, C. G. Silva, C. A. Rigsby, S. J. Burns, L. Giosan, B. Otto-Bliesner, Z. Liu, **J. Zhu** (2014), The role of North Brazil Current transport in the paleoclimate of the Brazilian Nordeste margin and paleoceanography of the western tropical Atlantic during the late Quaternary, *Palaeogeogr. Palaeoclimatol. Palaeoecol.*, 415, 3–13.

5. Huang, B., **J. Zhu**, H. Yang (2013), Mechanisms of Atlantic Meridional Overturning Circulation (AMOC) variability in a coupled ocean atmosphere GCM. *Adv. Atmos. Sci.*, 31(2), 241–251.

4. Liu, Z., A. Carlson, F. He, E. Brady, B. Otto-Bliesner, B. Briegleb, M. Wehrenberg, P. Clark, S. Wu, J. Cheng, J. Zhang, D. Noone, **J. Zhu** (2012), Younger Dryas cooling and the Greenland climate response to CO_2, *Proc. Natl. Acad. Sci.*, 109(28), 11101–11104. *(news release)*

3. **Zhu, J.**, H. Yang (2012), Response of the Atlantic thermohaline circulation to changes of atmospheric green house gases. *Acta Scientiarum Naturalium Universitatis Pekinensis*, 48(2), 231–238. (*in Chinese*)

2. Yang, H., **J. Zhu** (2011), Equilibrium thermal response timescale of global oceans. *Geophys. Res. Lett.*, 38(14), L14711, doi:10.1029/2011GL048076.

1. Qian, W., **J. Zhu**, Y. Wang, J. Fu (2009), Regional relationship between the Jiang-Huai Meiyu and the equatorial surface-subsurface temperature anomalies. *Chinese Science Bulletin*, 54(1), 113–119, doi:10.1007/s11434-008-0410-6.

SELECTED PRESENTATIONS

Zhu, J., Z. Liu, E. Brady, B. Otto-Bliesner, S. Marcott, J. Zhang, X. Wang, J. Nusbaumer, T. Wong, A. Jahn, and D. Noone, Investigating the direct meltwater effect in terrestrial oxygen-isotope records using an isotope-enabled Earth system model. AGU Fall Meeting. Dec. 2017. New Orleans, USA. *(ORAL)*

Zhu, J., Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. "Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model". CESM PaleoClimate Working Group Meeting. March 2017. Boulder, USA. *(ORAL)*

Zhu, J., Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. "Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model". AGU Fall Meeting. Dec. 2016. San Francisco, USA. *(ORAL)*

Zhu, J., Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. "Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model". CLIVAR Open Science Conference. Sep. 2016. Qingdao, China. *(ORAL)*

Zhu, J., Z. Liu, X. Zhang, I. Eisenman, and W. Liu. "Linear Weakening of the AMOC in Response to Lowering Ice-sheet Topography in CCSM3". High-Resolution Proxies of Paleoclimate Workshop. May 2015. Madison, WI. *(POSTER)*

Zhu, J., Z. Liu, J. Zhang, and W. Liu. "AMOC response to global warming: dependence on the background climate and response timescale". Annual CESM Workshop. Jun. 2014. Breckenridge, CO. *(POSTER)*

Zhu, J., Z. Liu, X. Zhang, I. Eisenman, and W. Liu. "Transient weakening of the AMOC to a receding glacial ice sheet in CCSM3 and its physical mechanisms". Annual CESM Workshop. Jun. 2014. Breckenridge, CO. *(ORAL)*

HONORS/AWARDS

Student Travel Grant, 2016 AGU Fall Meeting	Dec. 2016
Graduate Student Travel Award, AOS, UW-Madison	Oct. 2016
International Travel Grant, CLIVAR Open Science Conference	Sep. 2016
Honorable Mention, AOSS Community Poster Reception, UW-Madison	Apr. 2015
Reid Bryson Graduate Scholarship, CCR, UW-Madison	Mar. 2015
Merit student, Peking University	Dec. 2009
Outstanding Freshman Scholarship, Peking University	Sep. 2004

TEACHING EXPERIENCE

Teaching Assistant of *Introduction of Atmospheric Science*, School of Physics, Peking University Sep. 2009 – Jan. 2010

Teaching Assistant of *Descriptive Physical Oceanography*, School of Physics, Peking University Sep. 2008 – Jan. 2009

WORKSHOP COLLOQUIA

High-Resolution Proxies of Paleoclimate Workshop, Madison, WI	Jun. 2015
19th Annual CESM Workshop, Breckenridge, CO	Jun. 2014
Synthesis of Transient Climate Evolution of the last 21-kyr, Providence, RI	Nov. 2012
Community Earth System Modeling Tutorial, Boulder, CO	Aug. 2012
Thermodynamics of the Oceanic Environment, Xiamen, China	Sep. 2009
Beijing International Summer School on Climate and Environment, Beijing, China	Aug. 2009

COMPUTER SKILLS

Operating systems: Linux, Windows, Mac OS.

Programming languages: C, Fortran, Matlab, Phython, Ferret, NCL, NCO, HTML.

Document preparation: LaTeX, Microsoft Office Suite.