

## Shizuo Liu

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Google Scholar: <https://scholar.google.com/citations?user=u300zSkAAAAJ&hl=en&oi=ao>

### Research Interests:

I combine observational data and numerical models to examine the atmospheric circulation, ocean circulation and extreme weather events within the climate system, with the goal of improving climate prediction accuracy.

### Work Experience:

Assistant Professor, School of Atmospheric Sciences, Nanjing University, 2026.04-present

Postdoctoral Associate, Nicholas School of the Environment, Duke University, 2022.09–2026.02

### Education:

<u>Degree</u>	<u>Filed of Study</u>	<u>Institution</u>	<u>Date</u>
B.S.	Atmospheric Sciences	Nanjing University	2012-2016
M.S.	Atmospheric Sciences	Nanjing University	2016-2019
Ph.D.	Atmospheric Sciences	Fudan University	2019-2022

### Honors and Awards

Second Prize for Poster Presentation, CLIVAR International Workshop (2017)

Early Career Researcher Travel Award, 7th International Conference on Ocean Salinity (2024)

National Scholarship of Fudan University (Top 2%)

Excellent graduate student of Nanjing University (Top 5%)

National Scholarship of Nanjing University (Top 2%)

Excellent student of Nanjing University (Top 5%)

### Publications:

- Wu, Q., Tian, J., Yu, Q., **Liu, S.**, Yang, C., Hu, A., and Zhang, L. (2026). The Emerging Antarctic Amplification and Decelerating Arctic Amplification in the Recent Decade. *Submitted*.
- Luo, W., Wu, Q., **Liu, S.**, Zhang, Y.(2026). Co-variability of Tripolar Tibetan Plateau Snow Anomalies with Eurasian Snow and Its Impact on Wintertime Eurasian Teleconnections. *Submitted*.
- **Liu, S.**, Hu, S., & Seager, R. (2026). A snow-fire bridge mechanism for the 2025 Southern California winter wildfire. *Nat. Commun.* <https://doi.org/10.1038/s41467-026-70827-z>
- **Liu, S.**, Hu, S., & McPhaden, M. J. (2025). Salinity-induced eastward flow in boreal spring favors extreme El Niño. *Geophys. Res. Lett.*, 52(24), e2025GL118731.
- Zhang, C., Duan, A., Jia, X., & **Liu, S.** (2025). Connecting Tibetan Plateau snow change with Arctic sea-ice. *Geophys. Res. Lett.* 52, e2025GL116351.
- Wu, Q., Ma, Y., Hu, A., Rosenbloom, N., Zhang, L., Liu, H., **Liu, S.**, Yang, L. and Yang, C. (2025). Contributions of Sub-Decadal Pacific Sea Surface Temperature Variations to Rapid Antarctic Sea Ice Decline in the Recent Decade. *Nature Communications*, 16(1), 3386.

- **Liu, S.** and Hu, S.: Seeing through the Sea with Satellites: Reconstructing Ocean Subsurface Temperature and Salinity with Satellite Observations, *Earth Syst. Sci. Data Discuss.* [preprint], <https://doi.org/10.5194/essd-2024-334>, in review, 2024.
- **Liu, S.**, Hu, S., & Seager, R. (2024). The West Pacific teleconnection drives the interannual variability of autumn wildfire weather in the western United States after 2000. *Earth's Future*, 12(11), e2024EF004922 (Eos Editors' Highlight).
- **Liu, S.** and Hu, S. (2024). A 21st century shift in the mechanisms of the early-winter United States snowfall variability. *Environ. Res. Lett.* 19, 074021.
- **Liu, S.**, Wu, Q., et al. (2023). Impacts of Tibetan Plateau Snow Anomalies on the Northern Hemisphere Winter Atmospheric Circulation Due to Coupled North Pacific Atmosphere-Ocean Interactions. *J. Clim.* 36, 1369–1385.
- Zhang, C., Duan, A., Jia, X., Hu, J. and **Liu, S.** (2023). Snow Cover on the Tibetan Plateau and Lake Baikal Intensifies the Winter North Atlantic Oscillation. *Geophys. Res. Lett.* 50, e2023GL104754.
- **Liu, S.**, Wu, Q., et al. (2022). Impacts of Autumn-Winter Tibetan Plateau Snow Anomalies on North Atlantic- Europe and Arctic Climate. *J. Geophys. Res. Atmos.* 127, e2021JD035791.
- Wang, S., Wu, Q., **Liu, S.**, et al. (2022). Impacts of Antarctic Sea Ice Oscillation on Summer Atmospheric Circulation in the Northern Hemisphere [J]. *Chinese Journal of Atmospheric Sciences (in Chinese)*, 46(6): 1349–1365.
- Liang, H., Wu, Q., Ren, X., Yao, Y. and **Liu, S.** (2021). Impacts of Decay of Different El Niño Types on Boreal Summer Rainfall and Surface Air Temperature in South Asian Monsoon Region and Tibetan Plateau [J]. *Chinese Journal of Atmospheric Sciences (in Chinese)*, 45(4): 777–798.
- **Liu, S.**, Wu, Q., Wang, L., et al. (2020). Modeled climate responses to realistic extremes of Northern Hemisphere spring and summer snow anomalies. *J. Clim.* 33, 9905–9927.
- **Liu, S.**, Wu, Q., Schroeder, S.R., et al. (2020). Near-Global Atmospheric Responses to Observed Springtime Tibetan Plateau Snow Anomalies. *J. Clim.* 33, 1691–1706.
- Cao, D., Wu, Q., Hu, A. **Liu, S.**, et al. (2019) Linear and nonlinear winter atmospheric responses to extreme phases of low frequency Pacific sea surface temperature variability. *Clim Dyn.* 52, 49–68.
- Wu, Q., Yao, Y., **Liu S.**, et al. (2018) Tropical Indian Ocean warming contributions to China winter climate trends since 1960. *Clim Dyn.* 51, 2965–2987.
- **Liu, S.**, Wu, Q., Ren X., et al. (2017). Modeled Northern Hemisphere Autumn and Winter Climate Responses to Realistic Tibetan Plateau and Mongolia Snow Anomalies *J. Clim.* 30, 9435–9454.

#### **Personal Skills:**

- Peer reviewer for scientific journals (e.g., *Nature*; *Nature Communications*; *Communications Earth & Environment*; *npj Climate and Atmospheric Science*).
- Served as an invited guest lecturer several times, assisting teachers by taking over classes when needed, in Duke and Fudan universities.

#### **Attending Meetings:**

**Liu, S.** and Hu, S., 2025: A Snow-Fire Bridge Mechanism for the California Wildfire in January 2025, *AGU Fall Meeting*, New Orleans, USA, December 2025. (oral)

**Liu, S.**, Hu, S. and McPhaden, M. J., 2025: Extreme El Niño boosted by a boreal spring western Pacific salinity pattern, *AGU Fall Meeting*, New Orleans, USA, December 2025. (oral)

**Liu, S.** and Hu, S., 2025: Ocean salinity feedback amplifies extreme El Niño, *AMS Annual Meeting*, New Orleans, USA, January 2025. (oral)

- Liu, S.** and Hu, S., 2025: A 21st century shift in the mechanisms of the early-winter United States snowfall variability, *AMS Annual Meeting*, New Orleans, USA, January 2025. (oral)
- Liu, S.** and Hu, S., 2024: Seeing through the Sea with Satellites: Reconstructing Ocean Subsurface Temperature and Salinity with Satellite Observations, *7th Ocean Salinity Conference 2024*, ESA-ESTEC, Noordwijk, the Netherlands, May 2024. (poster)
- Liu, S.** and Hu, S., 2023: Reconstructing ocean subsurface temperature and salinity with satellite observations, *AGU 2023 Fall Meeting*, San Francisco, USA, December 2023. (poster)
- Liu, S.** and Hu, S., 2022: Observed Impacts of Western Pacific Westerly Wind Bursts on Sea Surface Temperature and Salinity: Spatial Dependence and the Role of Background State, *AGU 2022 Fall Meeting*, Chicago, USA, December 2022. (poster)
- Liu, S.**, Wu, Q. and Yao, Y., 2019: Global Atmospheric Responses to Observed Springtime Tibetan Plateau Snow Anomalies, *AGU 2019 Fall Meeting*, San Francisco, USA, December 2023. (oral)
- Liu, S.**, Wu, Q. Schroeder, S.R., 2018: Modeled Spring and Summer Climate Responses to Realistic Tibetan Plateau Snow Anomalies, *AGU 2018 Fall Meeting*, Washington, DC, USA, December 2022. (poster)
- Liu, S.**, Wu, Q., et al., 2017: Modeled Northern Hemisphere Autumn and Winter Climate Responses to Realistic Tibetan Plateau and Mongolia Snow Anomalies, *CLIVAR International Workshop on Climate*, Guangzhou, China, November 2017. (poster, second prize)