Cong Yin

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Bio

I am an early-career climate scientist pushing the boundaries of understanding wildfires and climate extremes using hydroclimatic, data-driven, and geostatistical approaches. My work has led to step-changes in understanding the synchronicity and persistence of extreme fire weather—factors that strongly influence extreme fire activity. Benefiting from world-class supervision and collaboration, I focus my recent work on extreme wildfires, one of the most societally and environmentally destructive consequences of climate change. I increasingly concentrate on predicting extreme wildfires and developing a mechanistic understanding of their causes, contributing to advances in fire science and fire management, with the potential to save lives and property.

Education

Ph.D. in Geographic Information Science *Sep. 2018 – Jun. 2024*
University of Chinese Academy of Sciences, Beijing, China
Advisor: Dr. Juanle Wang
Dissertation: Detection, Changes, and Impacts of Global Compound Events

Visiting Ph.D. Student at Columbia University, New York, NY, USA *Apr. 2023 – Jun. 2024*
Department: Lamont-Doherty Earth Observatory
Advisor: Dr. Mingfang Ting

B.S. in Land Resources Management *Sep. 2014 – Jun. 2018*
Chang'an University, Xi'an, China

Appointments

Postdoctoral Scientist at University of California, Merced, CA, USA *Aug. 2024 – Present*
Department: Sierra Nevada Research Institute
Advisor: Dr. John Abatzoglou

Publications

Published

[1] **C. Yin**, M. Ting, K. Kornhuber, R. M. Horton, Y. Yang, Y. Jiang, CETD, a global compound events detection and visualisation toolbox and dataset. Sci. Data 12, 356 (2025).

[2] Y. Liu, Y. Xin, **C. Yin**, A Transformer-based method to simulate multi-scale soil moisture. J. Hydrol. 655, 132900 (2025).

[3] **C. Yin**, Y. Yang, X. Chen, X. Yue, Y. Liu, Y. Xin, Global near real-time daily apparent temperature and heat wave dataset. Geosci. Data J. 10, 231–245 (2023).

[4] Y. Xin, Y. Yang, X. Chen, X. Yue, Y. Liu, **C. Yin**, One-kilometre monthly air temperature and precipitation product over the Mongolian Plateau for 1950–2020. Int. J. Climatol. 43, 3877–3891 (2023).

[5] **C. Yin**, Y. Yang, X. Chen, X. Yue, Y. Liu, Y. Xin, Changes in global heat waves and its socioeconomic exposure in a warmer future. Clim. Risk Manag. 38, 100459 (2022).

[6] Y. Xin, Y. Yang, X. Chen, X. Yue, Y. Liu, **C. Yin**, Evaluation of IMERG and ERA5 precipitation products over the Mongolian Plateau. Sci. Rep. 12, 21776 (2022).

[7] **C. Yin**, Y. Yang, F. Yang, X. Chen, Y. Xin, P. Luo, Diagnose the dominant climate factors and periods of spring phenology in Qinling Mountains, China. Ecol. Indic. 131, 108211 (2021).

[8] X. Chen, Y. Yang, **C. Yin**, Contribution of Changes in Snow Cover Extent to Shortwave Radiation Perturbations at the Top of the Atmosphere over the Northern Hemisphere during 2000–2019. Remote Sens. 13, 4938 (2021).

[9] **C. Yin**, F. Yang, J. Wang, Y. Ye, Spatiotemporal distribution and risk assessment of heat waves based on apparent temperature in the one belt and one road region. Remote Sens. 12, 1174 (2020).

[10] **C. Yin**, F. Yang, J. Wang, Analogs of Future Climate in Chinese Cities Identified in Present Observations. IEEE Access 8, 219151–219159 (2020).

Under Review

[1] **C. Yin**, J. T. Abatzoglou, M. W. Jones, A. C. Cullen, M. Sadegh, J. Wang, Y. Liu, Increasing synchronicity of global extreme fire weather.

In Preparation

[1] **C. Yin**, J. T. Abatzoglou, M. W. Jones, A. C. Cullen, M. Sadegh, Increasing fire weather waves as a critical driver of extreme fire activity.

[2] **C. Yin**, M. Ting, K. Kornhuber, R. M. Horton, Understanding the record-breaking concurrent heatwaves of summer 2023.

Funding

[1] Changes and Drivers of Global Extreme Fire Weather, China State Key Laboratory of Geographic Information Science and Technology — *PI (2024–, $5, 000)*

[2] Detection, Changes, and Impacts of Global Compound Events, University of Chinese Academy of Sciences — *PI (2023–2024, $24, 000)*

Presentations

[1] Increasing synchronicity of global extreme fire weather, SNRI Early Career Researcher Lightning Talks — *Oral, Mar. 2025, Merced, USA*

[2] Increasing Global Intra-Regional and Inter-Regional Synchronous Fire Danger, 2025 AMS Denver Summit — *Poster, May 2025, Denver, USA*

[3] CETD, a global compound events detection and visualization toolbox and dataset, Extreme Heat Workshop — *Poster, Jul. 2024, New York, USA*

[4] CETD, a global compound events detection and visualization toolbox and dataset, AGU Fall Meeting — *Poster, Dec. 2023, San Francisco, USA*

Techniques & Skills

Programming: Python (proficient), R (proficient), Linux (professional), MATLAB (skilled)
Software: ArcGIS (proficient), QGIS (proficient), ENVI (professional)
Language: English (professional), Chinese (native)

Honors & Awards

[1] First Class Academic Scholarship, University of Chinese Academy of Sciences — *Oct. 2022 & 2023*

[2] First Class Director Scholarship, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences — *Oct. 2021 & 2022*

[3] Scholarship for the International PhD Joint Training Program, University of Chinese Academy of Sciences — *Nov. 2022*

[4] Merit Student Scholarship, University of Chinese Academy of Sciences — *May 2020, 2021 & 2023*

[5] Outstanding Undergraduate Thesis, Chang'an University — *Jun. 2018*

Media & Outreach

Science Communication

[1] Founder of the WeChat public account "Extreme Science", Since Feb. 2025 — *799 followers*

Blog Posts

[1] CETD, a global compound events detection and visualisation toolbox and dataset, Reposted by the Columbia Climate School, Lamont-Doherty Earth Observatory, and Muser Press — *Mar. 2025*

Industry & Fieldwork

[1] A nine-day fieldwork investigating the ecological benefits of restoring grazing land to grassland in Tibet — *Jul. 2019, Tibet, China*

[2] Participation in county-level land and spatial planning development in Yunnan Province — *Jun. 2020, Yunnan, China*

[3] A fourteen-day fieldwork monitoring factory pollution using drones in northern China — *Nov. 2020, Hebei, China*