HUSILE BAI

CURRICULUM VITAE

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EDUCATION BACKGROUND

2018-2022   Ph.D. University of Utah, Department of Atmospheric Sciences

Salt Lake City, UT

- Advisors: Courtenay Strong
- Dissertation project: Teleconnection mechanisms associated with ecologically-relevant climate dipoles

2015-2018   M.S. University of Chinese Academy of Sciences, Institute of Earth Environment

Beijing, China

- Advisors: Dr. Guohui Li and Dr. Yu Liu
- Thesis project: Impact of the ice nuclei on the development of the cumulus clouds over the North China Plain

2011-2015   B.S. Lanzhou University, College of Atmospheric Sciences

Lanzhou, China

- Advisor: Dr. Yi Yang
- Capstone project: Numerical weather simulation and analysis of a heavy rainstorm

PUBLICATIONS

Husile Bai and Courtenay Strong (2023). Modeling study on teleconnections driving the summer North American dipole *(submitted)*

Luke Stone, Courtenay Strong, **Husile Bai**, Thomas Reichler, Greg McCabe, and Paul D. Brooks (2023). Atlantic Ocean influence on western U.S. hydroclimate and water resources *(submitted)*

Husile Bai, Courtenay Strong, and Benjamin Zuckerberg (2023). Drivers of an ecologically relevant summer North American dipole, *Journal of Climate*, 36, 2387-2399, https://doi.org/10.1175/JCLI-D-22-0542.1

Hu Sile, Liu Yu, Li Guohui. 2019. Impact of ice nuclei on the development of cumulus clouds over the North China Plain, *Journal of Earth Environment*, 10(3):257-266 (in Chinese)

Hu Sile, Li Yan, Fang Congxi, Chen Zhihong, The relationship between Ural blocking, Siberian high, and East Asian winter monsoon, *Journal of Lanzhou University*, 54(4):440-452 (in Chinese)

Yu liu, Weiyuan Ta, Qiang Li, Huiming Song, Changfeng Sun, Qiufang Cai, Han Liu, Lu Wang, **Hu Sile**, Junyan Sun, Wenbiao Zhang, Wenzhu Li (2018). Tree-ring stable carbon isotope-based April-June relative humidity reconstruction since AD 1648 in Mt. Tianmu, China, *Climate Dynamics*, 50, 1733–1745, https://doi.org/10.1007/s00382-017-3718-6

Liu, Yu, Han Liu, Huiming Song, Qiang Li, George S. Burr, Lu Wang, and **Hu Sile** (2017). A monsoon-related 174-year relative humidity record from tree-ring δ18O in the Yaoshan region, eastern central China, *Science of the Total Environment*, 593: 523-534, https://doi.org/10.1016/j.scitotenv.2017.03.198

RESEARCH INTERESTS

I am interested in climate dynamics and modeling research. I studied the teleconnection mechanisms and its impact on the ecological-evolutionary processes including conifer seed masting and bird migration for my Ph.D. dissertation. Currently, I am working on the glacier and cryosphere mass balance for my postdoctoral research.

RESEARCH EXPERIENCE

2020-2022	Developing the new interdisciplinary research program for understanding climate influence on the ecosystem process, such as bird migration and conifer seed masting Analyzing observation data and simulating atmospheric-ocean interactions using models run on powerful supercomputers.
2019-2020	Studied Land-Atmosphere coupling using Land Information System (LIS) framework
2017-2018	Investigated the aerosol impacts on the cloud formations with Cloud Resolving Weather Research and Forecasting (CR-WRF) model
2016-2017	Participated in the dendroclimatology fieldwork: sampling, drying, and polishing Tained in the dendroclimatology lab: tree-ring cross-dating and data processing
2015-2016	Trained LINUX operating system Studied numerical weather simulation using Weather Research and Forecasting (WRF) model Analyzed satellite and radar products

TEACHING EXPERIENCE

University of Utah, Department of Atmospheric Sciences

ATMOS 5400	The Climate System	Fall 2021 Fall 2020	Assist students in homeworks, host exam review sessions
ATMOS 6040	Environmental Stats	Spring 2021	Assist students in software operation (Matlab and Python)

MENTORSHIP

Olivia Mondlock, co-mentored Capstone project in Department of Atmospheric Sciences, University of Utah, 2021-2022

Zoe Exelbert, co-mentored Wilkes Scholar undergraduate project in Department of Atmospheric Sciences, University of Utah, Spring 2023

PRESENTATIONS

- **Husile Bai**, Courtenay Strong, Jalene M. LaMontagne, and Benjamin Zuckerberg. Summer North American dipole driven by stationary Rossby waves associated with tropical and monsoonal convection. Poster at 2022 AGU Fall Meeting, In-person, 12-16, December, 2022
- Ivy Widick, **Husile Bai**, Courtenay Strong, Jalene M. LaMontagne, and Benjamin Zuckerberg. Climate Dipoles entrain ecological dipoles: irruption dynamics of boreal finches. Oral presentation at 2022 AGU Fall Meeting, In-person, 12-16, December, 2022
- **Husile Bai**, Courtenay Strong, Benjamin Zuckerberg, and Jalene M. LaMontagne. Continental-scale climate dipoles driven by pan-Pacific waves. Poster at 2021 AGU Fall Meeting, In-person, 13-17, December, 2021
- **Husile Bai**, Courtenay Strong, Benjamin Zuckerberg, and Jalene M. LaMontagne. Global teleconnections of west-east pine siskin irruption mode. Poster at Macrosystems PI Annual Meeting, Virtual, 13-14, January, 2021
- **Hu-sile**, Liu-Yu, Li-Guohui. Impact of ice nuclei on the development of cumulus clouds over the North China Plain. Oral presentation at 2017 AGU Fall Meeting, 11-15, December, 2017

GRANT AND AWARDS

2022 AGU Chapman Conference Second National Conference: Justice in Geoscience travel grant ($*2.5K*)

2022 Rockstars (student service award), Department of Geology & Geophysics, University of Utah

2021 University of Utah graduate student travel award ($*0.5K*)

EDI PROMOTION

Assisted as committee member in the Committee for the Advancement of Inclusion and Diversity (CAID), College of Mines and Earth Sciences, University of Utah, 2020-2022

Inclusive Earth officer (social media promotion), College of Mines and Earth Sciences, University of Utah, 2021-2022

PROFESSIONAL SKILLS

Statistical and modeling techniques:

- Weather Research and Forecasting (WRF) model
- Global climate model (GCM) including Community Earth System model (CESM)
- Land Information System (LIS) Framework
- Fu-Liou radiative transfer model
- Icepack glacier mass balance model
- Programming languages including NCL, Matlab, Python, Fortran, IDL.
- In addition, I am familiar with a wide range of techniques and programs for data analysis and simulation under Unix (Linux) and Mac OS environments.

Other:

- I am fluent in Mongolian, English, and Mandarin Chinese, and have given presentations and taught in all three languages.