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Research Interests:

- Global Change Ecology
- Ecosystem Carbon Cycle
- Cryosphere
- Process-based Modeling

Education

Ph.D. (2022-) | Ecology

Institute of Geographic Sciences and Natural Resources Research, University of Chinese Academy of Sciences, Beijing, China.

Visiting Student (May. 2024–April. 2025)

Michigan State University, East Lansing, USA.

M.S. (2019–2022) | Geography

China University of Geosciences, Wuhan, China.

B.S. (2015–2019) | Physical Geography and Resources Environment

Shanxi University, Taiyuan, China.

Publications

- Liu, Z., Chen, B.✉, Wang, S.✉, Xu, X., Chen, H., Liu, X., He, J.-S., Wang, J., Wang, J., Chen, J., Wang, X., Zheng, C., Zhu, K., & Wang, X. (2024). More enhanced non-growing season methane exchanges under warming on the Qinghai-Tibetan Plateau. *Science of The Total Environment*, 917, 170438. (JCR:Q1; IF:9.8)
[\[DOI\]](#)
- Liu, Z., Chen, B.✉, Wang, S.✉, Wang, Q., Chen, J., Shi, W., Wang, X., Liu, Y., Tu, Y., Huang, M., Wang, J., Wang, Z., Li, H., & Zhu, T. (2021). The impacts of vegetation on the soil surface freezing-thawing processes at permafrost southern edge simulated by an improved process-based ecosystem model. *Ecological Modelling*, 456, 109663. (JCR:Q2; IF:3.1)
[\[DOI\]](#)
- Li, X., Liu, Z.✉, Wang, S., Li, F., Li, H., Zhu, T., Qian, Z., Tu, Y., Liu, Y., Wang, X., Wang, Q., Shi, W., & Li, D. (2022). Spatial characteristics of the stability of mangrove ecosystems in freshwater and seawater floods in Southeast Asia. *Journal of Geographical Sciences*, 32(9), 1831–1846.
[\[DOI\]](#)

- Liu, Z., Wang, S., Chen, B. (2021). Spatial and temporal variations of frozen ground and its vegetation response in the eastern segment of China-Mongolia-Russia economic corridor from 2000 to 2015. *Acta Geographica Sinica*. 76(5): 1231-1244. [刘侦海, 王绍强, & 陈斌. (2021). 2000—2015年中蒙俄经济走廊东段冻土时空变化及植被响应. *地理学报*, 76(5), 1231–1244] [\[DOI\]](#)

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- Li, H., Wang, X., Wang, S., Liu, J., Liu, Y., Liu, Z., Chen, S., Wang, Q., Zhu, T., Wang, L., & Wang, L. (2024). ChinaRiceCalendar – seasonal crop calendars for early-, middle-, and late-season rice in China. *Earth System Science Data*, 16(4), 1689–1701. [\[DOI\]](#)
- Chen, B., Li, Y., Wang, S., Chen, J., Zhang, X., Liu, Z., & Croft, H. (2024). Integrating leaf functional traits improves modelled estimates of carbon and water fluxes at a subtropical evergreen conifer forest. *Ecological Modelling*, 488, 110593. [\[DOI\]](#)
- Chen, B., Li, Y., Wang, S., Chen, J., Zhang, X., Liu, Z., & Croft, H. (2024). Integrating leaf functional traits improves modelled estimates of carbon and water fluxes at a subtropical evergreen conifer forest. *Ecological Modelling*, 488, 110593. [\[DOI\]](#)
- Chen, S., Li, X., Qian, Z., Wang, S., Wang, M., Liu, Z., et al. (2024). Drought trend and its impact on ecosystem carbon sequestration in Lancang-Mekong River Basin. *Acta Geographica Sinica*. 79(3), 747–764. (In Chinese) [\[DOI\]](#)

2023

- Chen, B., Wang, P., Wang, S., Ju, W., Liu, Z., et al. (2023). Simulating canopy carbonyl sulfide uptake of two forest stands through an improved ecosystem model and parameter optimization using an ensemble Kalman filter. *Ecological Modelling*, 475, 110212. [\[DOI\]](#)
- Wang, Q., Mei, M., Wang, S., Chen, B., Liu, Z., et al. (2023). Evaluation of the impacts of ozone on the vegetation productivity of woodland and grassland ecosystems in China. *Ecological Modelling*, 483, 110426. [\[DOI\]](#)
- Chen, S., Chen, B., Wang, S., Sun, L., Shi, H., Liu, Z., et al. (2023). Spatiotemporal variations of atmospheric nitrogen deposition in China during 2008–2020. *Atmospheric Environment*, 315, 120120. [\[DOI\]](#)

2022

- Zhu, T., Wang, S., Li, H., Li, X., Liu, Z., et al. (2022). Variation characteristics and correlation between vegetation phenology and extreme precipitation in Indo-China Peninsula. *Tropical Geography*. 43(3): 532-544. (In Chinese) [\[DOI\]](#)
- Li, H., Zhu, T., Liu, Z., Li, X., Wang, S., et al. (2022). Stability differences of coastal and inland vegetation to flood events in Southeast Asia. *Acta Ecologica Sinica*. 42(16): 6745-6757. (In Chinese) [\[DOI\]](#)
- Tu Y., Wang S., Huang M., Zhang, H., Chen, B., Liu, Z., et al. (2022). Optimization and Adjustment of Forestry Industrial Structure in Fujian Province [J]. *Forest Inventory and Planning*. 47(1): 135-140. (In Chinese) [\[DOI\]](#)

2021

- Chen, B., Lu, X., Wang, S., Chen, J.M., Liu, Y., Fang, H., Liu, Z., et al. (2021). Evaluation of Clumping Effects on the Estimation of Global Terrestrial Evapotranspiration. *Remote Sensing*, 13(20), 4075. [\[DOI\]](#)

2020

- Chen, B., Arain, M.A., Chen, J.M., Wang, S., Fang, H., Liu, Z., et al. (2020). Importance of Shaded Leaf Contribution to the Total GPP of Canadian Terrestrial Ecosystems: Evaluation of MODIS GPP. *Journal of Geophysical Research: Biogeosciences*, 125(10), e2020JG005917. [\[DOI\]](#)

2019

- Cheng, Y., Zhang, H.✉, Liu, Z., et. al. (2019). Hybrid algorithm for short-term forecasting of PM2.5 in China. *Atmospheric Environment*, 200, 264–279. [\[DOI\]](#)

Software Copyright

- Liu Z., Chen B., Wang S. (2023). Hourly frozen soil profile heat transfer simulator
- Li H., Wang S., Liu Z., Zhu T. (2021). Extreme climate index Sen+Mann-Kendall trend analysis system software. 2021SR0638388.

Awards

- 2021, National scholarship for Postgraduates
- 2019, "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition, First Prize of Shanxi Province

Conference

1. **2023**, AsiaFlux Conference 2023, Jeju Korea, Oral: More enhanced non-growing season methane ex-changes under warming on the Qinghai-Tibetan Plateau.
2. **2023**, The 7th Symposium of Young Scholars on Terrestrial Ecosystems, Linzhi Tibet China, Oral (in Chinese): Seasonal differences in response of methane flux to soil temperature over the Qinghai-Tibet Plateau.
3. **2021**, International Symposium on Coastal Ecosystems and Global Change, Xiamen Fujian China, Oral: Potential impacts of the increasing coastal flooding on mangrove forest ecosystem.
4. **2020**, The 6th Symposium of Young Scholars on Terrestrial Ecosystems, Nanjing Jiangsu China, Oral (in Chinese): Spatial and temporal variations of frozen ground and its vegetation response in the eastern segment of China-Mongolia-Russia economic corridor.
5. **2020**, The 2nd Symposium on Greenhouse Gas Monitoring in China, Online, Oral (in Chinese): Spatial and temporal variations of frozen ground and its vegetation response in the eastern segment of China-Mongolia-Russia economic corridor.
6. **2020**, The 19th Chinese Ecological Congress, Online, Poster: Spatial and temporal variations of frozen ground and its vegetation response in the eastern segment of China-Mongolia-Russia economic corridor. (Excellent Poster Award)

Field Experiment

- **2022**, Soil sampling in Haibei area, northern Tibetan Plateau.

Service & participation

- **2023**, Volunteer of geographic resources youth innovation forum, Youth innovation promotion association CAS
- **2022-2023**, Member of postgraduate student union of Institute of Geographic Sciences and Natural Resources Research
- **2015-2016**, Member of graduate student union of Shanxi University

Skills & Expertise

- Model: Boreal Ecosystem Productivity Simulator (BEPS)
- Flux data processing: PyFluxPro
- Programming: C/C++, MATLAB, Python, R
- Software: ArcGIS, ENVI