

Shengli Zhu

Ph.D. Student in Environmental Science and Engineering
King Abdullah University of Science and Technology (KAUST) | Thuwal, Saudi Arabia
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RESEARCH INTERESTS

Hydrology and Water Resources; Large-Scale Hydrological Simulation and Prediction; Rainfall-Runoff Modeling; Cold Regions Hydrological Processes.

EDUCATION BACKGROUND

King Abdullah University of Science and Technology2026 – Present

Ph.D. in Environmental Science and Engineering | Thuwal, Saudi Arabia
Supervisor: Prof. Hylke Beck

Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences2022 - 2025

M.Sc. in Natural Resource Science | Beijing, China
Supervisor: Prof. Zhaofei Liu
Thesis: “Runoff simulation in the source region of the Yellow River based on satellite precipitation products”.

Shandong Normal University2018 - 2022

B.S. in Geographic Science | Jinan, China
Supervisor: Prof. Houfeng Liu

PUBLICATIONS

- **Zhu, S.**, Liu, Z., 2024. Comprehensive quantitative assessment of the performance of fourteen satellite precipitation products over Chinese mainland. *Climate Dynamics*, 62: 6799-6818. DOI: 10.1007/s00382-024-07237-8.
- Yang, H., Yang, F., Sun, L., Ye, Y., **Zhu, S.**, 2023. Relationship between the North Atlantic sea surface temperature and the summer extreme high temperature in the Beijing-Tianjin-Hebei region, China. *Urban Climate*, 52:101683. DOI: 10.1016/j.uclim.2023.101683.
- **Zhu, S.**, Wang, Z., Qu, K., Xu, J., Zhang, J., Yang, H., Wang, W., Sui, X., Wei, M., Liu, H., 2023. Spatial Characteristics and Influence of Topography and Synoptic Systems on PM2.5 in the Eastern Monsoon Region of China. *Aerosol and Air Quality Research*, 23:220393. DOI: 10.4209/aaqr.220393.

CONFERENCE PRESENTATIONS

- **Zhu, S.**, Wada, Y., Miralles, D.G., Zhang, Y., Miao, C., Bangalath, H., Wang, X., Beck, H.E. Precipitation Trend Uncertainty from Product Choice Rivals or Exceeds the Magnitude of Actual Trends. AGU Annual Meeting 2026, San Francisco, USA, 7-11 December 2026 (abstract submitted).
- **Zhu, S.**, Abbas, A., Wang, X., Beck, H.E. Performance-Based Rain-Gauge Density Requirements Differ Across Climates and Applications. AGU Annual Meeting 2026, San Francisco, USA, 7-11 December 2026 (abstract submitted).

RESEARCH EXPERIENCE

- Ph.D. research | Precipitation observations and hydrological modeling | KAUST, Jan 2026–present
 - Evaluate the reliability of long-term global precipitation datasets used for climate monitoring and water management;
 - Quantify how rain-gauge network density affects hydrological simulation and precipitation estimation, to derive performance-based rain-gauge density recommendations.
- M.Sc. research | Hydrological modeling of the source region of the Yellow River (within an NSFC-funded project

on alpine river–lake basin hydrology) | IGSNRR, CAS, 2022–2025

- *Set up and calibrated hydrological models for the source region of the Yellow River to simulate runoff processes;*
- *Investigated how precipitation and snow-related processes affect runoff simulation in this high-mountain basin;*
- *Evaluated simulated runoff against observed discharge records from hydrological stations in the basin;*
- *Conducted field hydrological surveys in the basin (2023–2025), installing and maintaining water-level and precipitation monitoring instruments.*

SKILLS

- Modeling: HBV, SAC-SMA, TOPMODEL, SPHY;
- Programming: Python, MATLAB, R;
- Software: ArcGIS, QGIS, Git;
- Fieldwork Techniques: Hydrological measurements (e.g., water level and flow velocity) in remote and high-altitude areas, precipitation data collection, use of field instruments (e.g., GPS, Rain Gauge Data Logger, Water Level Data Logger).

ACADEMIC HONORS, FELLOWSHIPS & MEMBERSHIP

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| ➤ Merit Student of University of Chinese Academy of Sciences | 2025 |
| ➤ European Geosciences Union (EGU) Student Membership | 2024-present |
| ➤ American Geophysical Union (AGU) Student Membership | 2024-present |
| ➤ The Second prize of the 2023 IGSNRR director's scholarship, CAS | 2023 |