# Weijie Zhang

**Ph.D.** Candidate [expected complete month: 2024-04]
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PhD Supervisor: Dr. Martin Jung


## ACADEMIC BACKGROUND

| Title | University/Institution | Year | Main Focus |
|---|---|---|---|
| Ph.D. | Max Planck Institute for Biogeochemistry, Germany | 09/2020 - present | Water-Carbon Coupling |
| M.Sc. | Nanjing University, China | 09/2017 - 06/2020 | Dendrochronology |
| B.Sc. | Xinjiang University, China | 09/2013 - 06/2017 | ET from SEBAL model |

## RESEARCH INTERESTS

I have developed a post-hoc correction method, using the XGBoost algorithm, to address the long-standing **energy imbalance problem** in globally distributed eddy-tower observations. The approach is publicly available (at https://github.com/WJ714/HRHC_mpi_bgc.git) and can be easily implemented in each eddy site.

I have contributed to developing the **FLUXCOM** framework consisting of aspects of data pre-processing, model diagnosis and evaluation. Working within the team, I have also focused on upscaling water fluxes using corrected fluxes and analysing energy balance and **water use efficiency** across different spatial scales.

## PUBLICATIONS

- **Zhang, W.**, et al. (2023). A new post-hoc method to reduce the energy imbalance in eddy covariance measurements. *Geophys. Res. Lett.* (under review).
- **Zhang, W.**, et al. (2023). The effect of relative humidity on eddy covariance latent heat flux measurements and its implication for partitioning into transpiration and evaporation. *Agric. For. Meteorol.*, 330, 109305.
- **Zhang, W.**, et al. (2021). December–March temperature reconstruction from tree-ring earlywood width in southeastern China during the period of 1871–2016. *Int. J. Biometeorol.*, 65, 883-894.
- Li, W., ..., **Zhang, W.**, et al. (2023). Widespread and complex drought effects on vegetation physiology inferred from space. *Nat. Commun.*, 14, 4640.
- Yang, H., ..., **Zhang, W.**, et al. (2023). Global patterns of tree wood density. *Nat. Plants*, (submitted).
- Shi, S., ..., **Zhang, W.**, Lu, H. (2020). Tree-ring $\delta$18O from Southeast China reveals monsoon precipitation and ENSO variability. *Palaeogeogr. Palaeoclimatol. Palaeoecol.*, 558, 109954.
- Zhao, Y., ..., **Zhang, W.**, et al. (2019). Early summer hydroclimatic signals are captured well by tree-ring earlywood width in the eastern Qinling Mountains, central China. *Clim. Past*, 15, 1113–1131.

## AWARDS IN UNIVERSITY

National Scholarship for Students: Nanjing University [2017-2019] & Xinjiang University [2015, 2016]
National Encouragement Scholarship: Xinjiang University [2013, 2014]

## SCIENTIFIC ACTIVITIES & VOLUNTEERING

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|---|---|
| Conference Talks: | EGU General Assembly [2021-2023] & AGU Fall Meeting [2022] |
| Conference Posters: | AGU Fall Meeting [2021] |
| Research Stay: | Prof. Dr. Diego Miralles at Ghent University [March - May, 2023] |
| Workshops: | Sapflow [2021] & ET workshop [2021] & FLUXNET annual meeting [2023] |
| Summer School: | Trustworthy Artificial Intelligence for Environmental Science [June, 2022] |
| Reviewing Activities: | Agric. For. Meteorol.; Biogeosciences; J. Hydrol.; Remote Sens. Environ. |
| Volunteering: | FLUXNET ECN organiser [2022]; Cross-Scale ET workshop organiser [2022]; Core Volunteer for the National Conference on Physical Geography [2017] |

## SKILLS & INTERESTS

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|---|---|
| Programming: | Python [advanced] |
| Interests: | Statistics; Explainable AI; Supercomputing; Julia; Running |