

Yuntao Wu

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RESEARCH INTERESTS

My research interests are focused on the effects of plant-soil interactions on soil carbon stability and storage. I am particularly interested in understanding how climate, vegetation and microbial activities drive the geographic patterns of Al-/Fe-(hydr)oxides-organic carbon associations. In addition, I am interested in exploring how mycorrhizal association mediates particulate organic matter (POM) and mineral associated organic matter (MAOM) formation and turnover.

EDUCATION

2018-Present Ph.D. candidate in Ecology Institute of Botany, Chinese Academy of Sciences
Dissertation: The effects of microbial-mineral interactions on soil organic carbon stability and storage.
Supervisor: Professor Lingli Liu

2014-2018 B.S. in Grassland Science Northwest A&F University
Dissertation: Effects of nitrogen deposition on the stability of soil organic carbon of grassland ecosystem
Supervisor: Professor Peizhi Yang & Professor Lingli Liu

ACADEMIC POSITIONS

2018-Present Research Assistant (Lingli Liu's Lab), Institute of Botany, Chinese Academy of Sciences
2015- 2017 Teaching Assistant, Northwest A&F University

AWARDS & FELLOWSHIPS

Awards:

- 2022 First-class scholarship of CAS, Institute of Botany, Chinese Academy of Sciences
- 2018-2022 Tuition Scholarship, University of Chinese Academy of Sciences
- 2015-2018 Scholarship of Northwest A&F University
- 2020 Outstanding student, University of Chinese Academy of Sciences
- 2016 Outstanding student, Northwest A&F University

Fellowships:

- 2017- 2018 Science and Technology Innovation Fellowship for College Students, Chinese Academy of Science, "*Effects of nitrogen deposition on soil carbon components with different stability*" (KCJH-80105-2017-020).
- 2015- 2017 Undergraduate Training Fellowship for Innovation and Entrepreneurship, Northwest A&F University, "*The dynamic of plant and soil fungal community assemblage under N deposition*" (1201610712023).

PUBLICATIONS PAPERS

- [1] **Wu YT**, Deng MF, Huang JS, Yang S, Guo LL, Yang L, Ahirwal J, Peng ZY, Liu WX, Liu LL. Global patterns in mycorrhizal mediation of soil carbon storage, stability, and nitrogen demand: A meta-analysis. *Soil Biology & Biochemistry*, 2022, 166.
- [2] **Wu YT**, Yang S, Wang X, Huang JS, Wang B, Liu WX, Liu LL. Responses of soil nitrogen in different soil organic matter fractions to long-term nitrogen addition in a semi-arid grassland. *Chinese Journal of Plant Ecology*, 2021, 45(7): 790-798. (in Chinese)
- [3] Peng ZY, **Wu YT**, Liu WX, Guo LL, Yang L, Wang B, Wang X, Su YJ, Wu J, Liu LL. Foliar nutrient resorption stoichiometry and microbial phosphatases catalytic efficiency together alleviate the relative P limitation in forest ecosystems. *New Phytologist*, 2023, 238(3), 1033-1044.
- [4] Jia Z, Li P, **Wu YT**, Chang PF, Deng MF, Liang LY, Yang S, Wang CZ, Wang B, Yang L, Wang X, Wang ZH, Peng ZY, Guo LL, Ahirwal J, Liu WX, Liu LL. Deepened snow loosens temporal coupling between plant and microbial N utilization and induces ecosystem N losses. *Global Change Biology*, 2022, 28, 4655-4667.
- [5] Li P, Sayer E, Jia Z, **Wu YT**, Deng MF, Wang X, Liu C, Wang B, Wang Y, Bai YF, Liu LL. Deepened snow cover mitigates soil carbon loss from intensive land use in a semi-arid temperate grassland. *Functional Ecology*, 2022. 36(3): 635-645.
- [6] Jia Z, Li P, **Wu YT**, Yang S, Wang CZ, Wang B, Yang L, Wang X, Li J, Peng ZY, Guo LL, Liu WX, Liu LL. Deepened snow cover alters biotic and abiotic controls on nitrogen loss during non-growing season in temperate grasslands. *Biology and Fertility of Soils*, 2021. 57, 165–177.
- [7] Deng MF, Li P, Wang ZH, Guo LL, **Wu YT**, Huang JS, Wang XH, Liu LL. Drought and salinization stress induced by stand development alters mineral element cycling in a larch plantation. *Journal of Geophysical Research: Biogeosciences*, 2021, e2020JG005906.
- [8] Wang X, Wang B, Wang CZ, Li J, Jia Z, Yang S, Li P, **Wu YT**, Pan SN, Liu LL. Canopy processing of N deposition increases short-term leaf N uptake and photosynthesis, but not long-term N retention for aspen seedlings. *New Phytologist*, 2021, 229 (5), 2601-2610.
- [9] Yan, ZB, Guo, ZF, Serbin, SP, Song, GQ, Zhao, YY, Chen, Y, Wu SB, Wang J, Wang X, Li J, Wang B, **Wu YT**, Su YJ, Wang H, Rogers A, Liu LL, Wu J. Spectroscopy outperforms leaf trait relationships for predicting photosynthetic capacity across different forest types, *New Phytologist*, 2021,232(1):134-147.
- [10] Li P, Sayer EJ, Jia Z, Liu WX, **Wu YT**, Yang S, Wang CZ, Yang L, Chen DM, Bai YF, Liu LL. Deepened winter snow cover enhances net ecosystem exchange and stabilizes plant community composition and productivity in a temperate grassland. *Global Change Biology*, 2020, 26(5): 3015-3027.
- [11] Wu SB, Wang J, Yan ZB, Song GQ, Chen Y, Ma Q, Deng MF, **Wu YT**, Zhao YY, Yang X, Su, YJ, Liu LL, Wu J. Monitoring tree-crown scale autumn leaf phenology in a temperate forest with an integration of Planet Scope and drone remote sensing observations. *ISPRS Journal of Photogrammetry and Remote Sensing*, 2020, 171: 36-48.

[12] Chen WQ, Xu R, **Wu YT**, Chen J, Zhang YJ, Hu TM, Yuan XP, Zhou L, Tian TY, Fang JR. Plant diversity is coupled with beta not alpha diversity of soil fungal communities following N enrichment in a semi-arid grassland. *Soil Biology and Biochemistry*, 2018, 116:388-398.

PROFESSIONAL SKILLS:

Statistics skills: R (Hierarchical Bayesian Model, Random Forest, MCMCglmm, PiecewiseSEM, etc.);
Adobe Illustrator, Microsoft Office

Lab and field skills: Soil physical and chemical analysis, plant and litter chemistry, microbial biomass determination, PLFA, soil density and particle size fractionation, greenhouse gas analysis (gas chromatography), multispectral analysis

Other: Drone flight (DJI M300 RTK, DJI Phantom IV, etc.)

ACTIVITIES

Conferences activities:

- 2019 The 9th Chinese Ecologist Club Xiong'an Life Science Forum, Hebei, China
- 2018 The First Symposium on Remote Sensing of Vegetation, Jiangsu, China
- 2018 The 3th International Greenhouse Gas Flux workshop, Jiangsu, China

Public service activities

- 2018-2019 The UCAS "freshman cup" basketball tournament, player and volunteer;
- 2019-2020 The IBCAS "Chinese New Year's Eve party", host and volunteer;
- 2022 The "Winter Olympic City Volunteer Service Activity Matchmaking Meeting", volunteer.
- 2016-2018 College student practical activities "key technology poverty alleviation", volunteer.