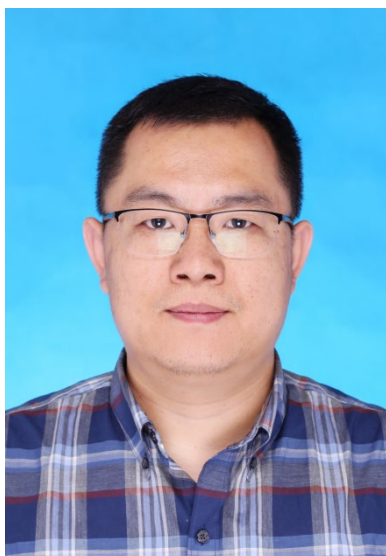


导师简介



一、基本信息

姚允龙，博士，教授，博士生导师。长期从事湿地生态学、环境遥感、植物多样性监测，近期主要开展无人机多/高光谱/激光雷达对植物多样性的预测反演研究。先后主持国家自然科学基金面上项目、国家重点研发计划项目子课题、国际合作项目、横向课题等，以第一作者或通讯作者发表论文 20 多篇，参与出版专著 2 部，获得国家发明专利 3 项和实用新型专利 2 项，获得教育部高等学校科学研究优秀成果奖二等奖 1 项、黑龙江省高校科学技术成果奖一等奖 1 项、中国风景园林学会科技进步奖三等奖 1 项。主讲湿地保护学、湿地生态学、3S 技术与应用等课程。

二、所在学科

林学 野生动植物保护与利用

三、学习经历

2004/09-2009/07，中国科学院东北地理与农业生态研究所，环境科学，博士

2000/09-2004/07，齐齐哈尔大学，资源环境与城乡规划，学士

四、工作经历

2025/01-至今，东北林业大学，教授/博导

2020/09-2024/12，东北林业大学，副教授/博导

2019/01-2020/08，东北林业大学，副教授/硕导

2017/12-2018/12，威斯康星大学麦迪逊分校，环境遥感，访问学者

2014/09-2015/09，威斯康星大学麦迪逊分校，生态水文学，访问学者

2009/09-2018/12，东北林业大学，讲师

五、研究方向

植物多样性遥感、湿地生态学、植物多样性监测

六、科研项目与学术成果

1. 承担项目

- (1) 国家自然科学基金面上项目“基于关键轴解析的沼泽湿地植物多样性光谱反演”，时间：2025.01-2028.12，主持人
- (2) 国家重点研发计划子课题“湿地恢复关键区域识别与障碍节点诊断”，时间：2024.11-2028.10，主持人
- (3) 国家重点研发子课题“多尺度沼泽湿地生态网络完整性提升技术”，时间：2022.09-2026.08，主持人

此外，还先后主持了国际合作项目、自然保护地的本底调查、植物样地建设与监测，栖息地修复规划、生物多样性信息系统研发等各类项目多项。

2. 期刊论文

(1) Yuanqi Shan, Yunlong Yao*, Lei Wang, Zhihui Wang, Huaihu Yi, Yi Fu, Weineng Li, Xuguang Zhang, Wenji Wang, Zhongwei Jing. Prediction of canopy mean traits in herbaceous plants by the UAV multispectral data: The quest for a better leaf-to-canopy upscaling method[J]. International Journal of Applied Earth Observation and Geoinformation, 2025, 141: 104650.

(2) Yuanqi Shan, Yunlong Yao*, Zhihui Wang, Yi Fu, Lei Wang, Wenji Wang, Xuguang Zhang, Huaihu Yi, Yuna Liu. Trait prediction in rare marsh plants: A PLSR modeling framework using dominant families and sample size thresholds[J]. Ecological Informatics, 2025, 92: 103492.

(3) Yi Fu, Yunlong Yao*, Lei Wang, Huaihu Yi, Yuanqi Shan. How spatial resolution mediates canopy spectral diversity as a proxy for marsh plant diversity[J]. Ecological Informatics, 2025, 90: 103253.

(4) Yunlong Yao*, Yuna Liu, Yi Fu, Xuguang Zhang, Lei Wang, Renping Liu. Detect changes in marsh plant communities based on Landsat long time series data and BFAST model[J]. Land Degradation & Development, 2025.

(5) Yi Fu, Xiaopeng Tan, Yunlong Yao*, Lei Wang, Yuanqi Shan, Yuehua Yang, Zhongwei Jing. Uncovering optimal vegetation indices for estimating wetland plant species diversity[J]. Ecological Indicators, 2024, 166: 112367.

(6) Jia jia, Lei Wang, Yunlong Yao*, Yalin zhai, jiyuan Fang, Zhongwei jing, Ruonan Li,

Mingchen Yao. Canopy niche diversity and complementarity impact the forest vertical thermal environment in an urban area[J]. FOREST ECOLOGY AND MANAGEMENT, 2024, 360: 110301.

(7) 谭博文, 单元琪, 谭霄鹏, 姚允龙*. 基于多方法的沼泽湿地草本植被物候变化研究[J]. 遥感技术与应用, 2024, 39 (05): 1205-1212.

(8) Xiaopeng Tan, Yuanqi Shan, Lei Wang, Yunlong Yao*, Zhongwei Jing. Density vs. Cover: Which is the better choice as the proxy for plant community species diversity estimated by spectral indexes?[J]. International Journal of Applied Earth Observation and Geoinformation, 2023, 121: 103370.

(9) Jia Jia, Lei Wang, Yunlong Yao*, Zhiwei Ye, Yalin Zhai, Jiyuan Fang, Zhongwei Jing, Ruonan Li, Mingchen Jing. Effects of the fundamental axes of variation in structural diversity on the forest canopy temperature in an urban area[J]. The Science of the total environment, 2023, 903, 166201.

(10) Yuanqi Shan, Yi Fu, Lei Wang, Yunlong Yao*. Response of the nitrogen processing bacterial community to water level fluctuation and nitrate availability in an intact marsh soil column[J]. Environmental science and pollution research international, 2023, 30(52): 111947-111957.

(11) Xiaopeng Tan, Yuanqi Shan, Xin Wang, Renping Liu, Yunlong Yao*. Comparison of the predictive ability of spectral indices for commonly used species diversity indices and Hill numbers in wetlands[J]. Ecological Indicators, 2022, 142: 109233.

(12) 姚允龙*, 王欣, 谭霄鹏, 单元琪. 基于 PLSR 的典型沼泽湿地植物叶片性状与光谱模型构建——以三江国家级自然保护区为例[J]. 地理科学, 2022, 42(09): 1638-1645.

(13) Chula Patteson Mwangi, Yunlong Yao*, Yuanqi Shan, Hongxian Yu. Effect of Water Level Fluctuation and Nitrate Concentration on Soil-Surface CO₂ and CH₄ Emissions from Riparian Freshwater Marsh Wetland[J]. Wetlands, 2021, 41: 109.

(14) 单元琪, 姚允龙*, 张欣欣, 张强. 三江平原七星河流域湿地植物多样性及影响因素[J]. 生态学报, 2020, 40(05): 1629-1636.

(15) Lei Wang, Yunna Jia, Yunlong Yao*, Dawei Xu. Identification and evaluation of land use vulnerability in a coal mining area under the coupled human-environment[J]. Open Geosciences, 2019, 11(1): 64-76.

(16) Ekoko W A, Yao Yunlong*, Shan Yuanqi, et al. Aquatic vascular plants from the sanjiang

plain, northeast China[J]. Applied Ecology and Environmental Research, 2021, 19(4): 2689-2699.

(17) Chula Patteson Mwagana, Yunlong Yao*, Yuanqi Shan, Hongxian Yu. Greenhouse gas emissions from intact riparian wetland soil columns continuously loaded with nitrate solution: a laboratory microcosm study[J]. Environmental science and pollution research international, 2019, 26(32): 33702-33714.

(18) Chula Patteson Mwagana, Yunlong Yao*, Yuanqi Shan, Yu Hongxian. Laboratory study on nitrate removal and nitrous oxide emission in intact soil columns collected from nitrogenous loaded riparian wetland, Northeast China[J]. PloS one, 2019, 14(3): e0214456.

(19) Liquan Song, Yunlong Yao*, Lin Lin, Weifeng Gao, Tiji Cai, Hong Liang, Dawen Gao. The potential source of nitrous oxide in the pristine riparian marsh during freeze-thaw cycles, case study in Northeast China[J]. Ecological Engineering, 2019, 134: 18-25.

(20) Lei Wang, Yao Lu, Yunlong Yao*. Comparison of Three Algorithms for the Retrieval of Land Surface Temperature from Landsat 8 Images[J]. Sensors, 2019, 19(22): 5049.

3. 专利

(1) 姚允龙等. 发明专利, 一种湿地植物多样性监测及格局优化方法. 专利号: ZL 202210202916.X

(2) 姚允龙等. 发明专利, 一种湿地植物生长信息监测方法. 专利号: ZL202210691587.X

(3) 姚允龙等. 实用新型专利, 一种地物光谱仪的适配器. 专利号: ZL 202322397810.2

七、招生方向

欢迎拥有生态学、林学、遥感、地信、数学、计算机、软件等相关专业背景, 对生态遥感、植物多样性、功能性状、大数据和卫星、无人机遥感技术有浓厚兴趣, 并具备良好的自学能力、钻研精神、团队合作精神, 愿意与导师与课题组成员共同努力, 推动本领域进步的学生加入团队。

我们团队是热爱探索、热爱生活的团队。