

# Hongxiang Fan

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## EDUCATION

### Ph.D. in Physical Geography

University of Chinese Academy of Sciences

Sep 2016 – Jul 2019

### M.Sc. in Physical Geography

University of Chinese Academy of Sciences

Sep 2013 – Jul 2016

### B.Sc. in Environmental Engineering

Huazhong Agricultural University

Sep 2009 – Jul 2013

## RESEARCH EXPERIENCE

### HONORARY VISITING SCHOLAR

Flinders University, South Australia

Jan 2024 – Present

Work with Prof. [Adrian Werner](#) on surface-groundwater interaction related projects.

- Focus on coastal hydrology and surface-groundwater interactions.
- Submarine Freshwater Groundwater Discharge (SFGD).

### RESEARCH ASSISTANT

Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences

Jul 2019 – Present

- Built a fully coupled model for surface-groundwater interaction in floodplain wetlands.
- Developed a new algorithm for evaluating surface hydrological connectivity with parallel computing technique.
- Explored how convective behaviors and moisture sources determine the variability of precipitation stable isotope
- Developed a random forest model to predict river isotopes across China at the catchment scale.

### PH.D. CANDIDATE

University of Chinese Academy of Science

Sep 2016 – Jul 2019

- Built a 2D water environment model for Poyang Lake in China and coupled it with a runoff prediction model.
- Attributed the relative contributions of climate change and anthropogenic activities on the water environment.

# PUBLICATIONS

1. 孟元可, 叶许春, 徐力刚, 徐昔保, 范宏翔, 黄涛. [2000–2015年鄱阳湖区植被净初级生产力变化及驱动因素分析](#). 湿地科学. 2018;16:360–9.
2. 冯文娟, 徐力刚, 范宏翔, 李新艳, 董磊. [梅西湖与鄱阳湖水位变化关系及其水量交换过程分析](#). 陕西师范大学学报(自然科学版). 2015;43:83–8.
3. 毛智宇, 徐力刚, 赖锡军, 王晓龙, 李云良, 李相虎, et al. [基于综合指标法的鄱阳湖生态系统健康评价](#). 湖泊科学. 2023;35:1022–36.
4. 曹宇贤, 徐力刚, 范宏翔, 毛智宇, 程俊翔, 王殿常, et al. [1960年以来气候变化与人类活动对鄱阳湖流域生态径流改变的影响](#). 湖泊科学. 2022;34:232–46.
5. 李楷文, 丁梦瑶, 范宏翔, 吴华武, 雷蕊宇, 付丛生, et al. 基于氢氧稳定同位素的鄱阳湖流域“五河”新水比例及其滞留时间量化研究. 湖泊科学. 2025;37:1–13.
6. 王辉, 雷蕊宇, 樊冬玲, 范宏翔. [基于MIKE21的骆马湖汛期总磷模拟及优化调控研究](#). 环境监测管理与技术. 2023;35:65–70.
7. 黄涛, 徐力刚, 范宏翔, 孟元可. [长江流域干旱时空变化特征及演变趋势](#). 环境科学研究. 2018;31:1677–84.
8. 陈远, 范宏翔, 彭凯, 邓建明, 彭霓虹. [基线选择对热浪事件计算方法的影响](#). 河南师范大学学报(自然科学版). 2025;125–35.
9. 鲁照, 黄河清, 徐力刚, 范宏翔. [基于熵权的WQI法在鄱阳湖水质评价中的应用](#). 环境监测管理与技术. 2021;33:30–4.
10. 范宏翔, 何菡丹, 徐力刚, 张明睿, 姜加虎. [基于长短记忆模型的鄱阳湖流域径流模拟及其演变的归因分析](#). 湖泊科学. 2021;33:866–78.
11. 刘星根, 谭志强, 范宏翔. [赣江尾闾碟形湖水体季节性分布特征](#). 人民长江. 2021;52:66–72.
12. 王霞, 刘雷, 何跃, 范宏翔. [洪泽湖水体富营养化时空分布特征与影响因素分析](#). 环境监测管理与技术. 2019;31:58–61.
13. 张明睿, 郑俊, 徐力刚, 范宏翔, 张德伟. [城市小流域面源污染输出特征及污染负荷分类核算研究](#). 环境监测管理与技术. 2021;33:25–9.
14. 程俊翔, 徐力刚, 姜加虎, 谭志强, 喻崎雯, 范宏翔. 洞庭湖流域径流量对气候变化和人类活动的响应研究. 农业环境科学学报. 2016;35:2146–53.
15. 丁艺鼎, 蒋名亮, 徐力刚, 范宏翔, 吕海深. 基于鲸鱼优化算法的长短期记忆模型水库洪水预报. 湖泊科学. 2024;36:320–32.
16. 丁艺鼎, 范宏翔, 徐力刚, 蒋名亮, 吕海深, 朱永华, et al. 可解释性长短期记忆模型用于预测湖泊总磷浓度变化. 湖泊科学. 2024;36:1046–60.
17. 范宏翔, 徐力刚, 赵旭, 胡岳峰. [太湖流域典型稻-麦轮作农田区氮素流失过程研究](#). 生态环境学报. 2015;24:255–62.
18. 杜冰雪, 徐力刚, 张杰, 范宏翔, 程俊翔, 黄涛, et al. [鄱阳湖富营养化时空变化特征及其与水位的关系](#). 环境科学研究. 2019;32:795–801.
19. 范宏翔, 徐力刚, 朱华, 鲁照, 曹宇贤, 吴亚坤, et al. [气候变化和人类活动对鄱阳湖水龄影响的定量区分](#). 湖泊科学. 2021;33:1175–87.
20. 杜冰雪, 徐力刚, 蒋名亮, 程俊翔, 谭志强, 范宏翔. [2000–2014年洞庭湖区植物面积变化及其与湖泊水位的关系](#). 湿地科学. 2020;18:20–7.
21. Cheng J, Xu L, Fan H, Jiang J. [Changes in the flow regimes associated with climate change and human activities in the yangtze river](#). River Research and Applications. 2019;35:1415–27.
22. Cheng J, Xu L, Feng W, Fan H, Jiang J. [Changes in water level regimes in china's two largest freshwater lakes: Characterization and implication](#). Water. 2019;11.

23. Fan H, Jiang M, Xu L, Zhu H, Cheng J, Jiang J. **Comparison of long short term memory networks and the hydrological model in runoff simulation**. *Water*. 2020;12.
24. Fan H, Xu L, Wang X, Jiang J, Feng W, You H. **Relationship between vegetation community distribution patterns and environmental factors in typical wetlands of poyang lake, china**. *Wetlands*. 2017;39:75–87.
25. Fan H, Xu L, Wang X, Wu Y, Jiang J. **Identify the influencing paths of precipitation and soil water storage on runoff: An example from xinjiang river basin, poyang lake, china**. *Water Supply*. 2017;18:1598–605.
26. Fan H, Xu L, Tao H, Feng W, Cheng J, You H. **Assessing the difference in the climate elasticity of runoff across the poyang lake basin, china**. *Water*. 2017;9.
27. Huang T, Xu L, Fan H. **Drought characteristics and its response to the global climate variability in the yangtze river basin, china**. *Water*. 2018;11.
28. Jiang M, Xu L, Chen X, Zhu H, Fan H. **Soil quality assessment based on a minimum data set: A case study of a county in the typical river delta wetlands**. *Sustainability*. 2020;12:9033.
29. Li J, Song F, Bao Z, Fan H, Wu H. **Insights into shallow freshwater lakes hydrology in the yangtze floodplain from stable water isotope tracers**. *Water*. 2022;14:506.
30. Wu H, Fan H, Lei R, Sun C, Wang S, Wu H, et al. **Atmospheric processes control the stable isotopic variability of precipitation in the middle–lower reaches of the yangtze river basin, east asian monsoon region**. *Journal of Hydrology*. 2023;623:129835.
31. Xu G, Fan H, Oliver DM, Dai Y, Li H, Shi Y, et al. **Decoding river pollution trends and their landscape determinants in an ecologically fragile karst basin using a machine learning model**. *Environmental Research*. 2022;214:113843.
32. You H, Fan H, Xu L, Wu Y, Liu L, Yao Z. **Poyang lake wetland ecosystem health assessment of using the wetland landscape classification characteristics**. *Water*. 2019;11.
33. You H, Fan H, Xu L, Wu Y, Wang X, Liu L, et al. **Effects of water regime on spring wetland landscape evolution in poyang lake between 2000 and 2010**. *Water*. 2017;9.
34. Zhu H, Xu L, Jiang J, Fan H. **Spatiotemporal variations of summer precipitation and their correlations with the east asian summer monsoon in the poyang lake basin, china**. *Water*. 2019;11.
35. Xu J, Fan H, Luo M, Li P, Jeong T, Xu L. **Transformer based water level prediction in poyang lake, china**. *Water*. 2023;15.
36. Fan H, Song F, Wu H, Du Y, Lei R, Ding M, et al. **Identifying the pattern of shallow groundwater hydrochemistry and its driving factors in a typical estuarine delta of poyang lake watershed, china: Insights into water quality assessment**. *Journal of Hydrology: Regional Studies*. 2024;56:102049.
37. Xiong C, Li H, Fan H, Askar A. **Historical development, impact mechanism and future trends of nitrogen footprint in wuxi city, china**. *Science of The Total Environment*. 2024;934:173240.
38. Li X, Yuan C, Sun T, Fan H. **Identifying the spatiotemporal patterns of drought-flood alternation based on IMERG product in the humid subtropical poyang lake basin, china**. *Journal of Hydrology: Regional Studies*. 2024;54:101912.
39. Liu Y, He H, Zhou J, Fan H, Wu Q, Delang CO. **Understanding thermal stratification and circulation dynamics in fuxian lake: Insights from EFDC simulation study**. *Ecological Indicators*. 2024;165:112202.

40. Wu H, Fan H, Li J, Yue F-J, Lian E, Fu C, et al. **Reproducing surface water isoscapes of  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  across china: A machine learning approach.** Journal of Hydrology. 2024;638:131565.
41. Xu C, Yuan C, Li X, Lin Y, Fan H. **Projection of disaster-causing risk of extreme precipitation in the yangtze river basin based on CMIP6.** Hydrology Research. 2023;54:401–17.
42. Cheng J, Xu L, Wang R, You H, Fan H, Wu Y. **Comprehensive evaluation of environmental flows in the yangtze river regulated by two large dams.** Ecohydrology & Hydrobiology. 2024;24.
43. Lei X, Gao L, Wei J, Ma M, Xu L, Fan H, et al. **Contributions of climate change and human activities to runoff variations in the poyang lake basin of china.** Physics and Chemistry of the Earth, Parts A/B/C. 2021;123:103019.
44. Fan L, Cheng J, Xie Y, Xu L, Buttler A, Wu Y, et al. **Spatio-temporal patterns and drivers of  $\text{CH}_4$  and  $\text{CO}_2$  fluxes from rivers and lakes in highly urbanized areas.** Science of The Total Environment. 2024;918:170689.