Hongxiang Fan

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EDUCATION

Ph.D. in Physical Ggeography
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 Enviromental Engineering
Huazhong Agriclutural 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, 彭霁虹. **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. **Accessing 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 $\delta^{18}O$ and $\delta^{2}H$ 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 CH_4 and CO_2 fluxes from rivers and lakes in highly urbanized areas**. Science of The Total Environment. 2024;918:170689.