

Xianyuan Bao

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EDUCATION BACKGROUND

M.S. of Engineering, River Dynamics

Sep 2023 – Present

School of Civil and Hydraulic Engineering, Ningxia University

B.S. of Engineering, Building Environment and Energy Application Engineering

Sep 2018 – Jul 2022

School of Energy and Environment, Zhongyuan University of Technology

PROJECT EXPERIENCE

[Host] **Coupling mechanisms of water-sediment-ecology-economy system in the Yellow River Basin based on multi-agent modeling**

Postgraduate Innovation Project of Ningxia University (Grantee: Xianyuan Bao, 6,000 CNY) 2025 – Present

This project aims to construct a coupling model of hydrological processes-vegetation succession-industrial activities, and deconstruct the complex mutual feedback mechanism of water and sediment migration, vegetation succession and industrial activities in the basin. Building upon my previous NSFC research on water-sediment-economy interactions, this work provides critical theoretical support for future watershed management strategies.

[Participate] **Coordination mechanism and regulation strategy of multiple processes of water-sediment-ecology economy system in the Yellow River Basin**

NSFC Programs for Joint Funds (Grantee: Prof. Enhui Jiang, 11,720,000 CNY) 2023 – Present

The project explores the feedback mechanisms between environmental changes and socio-economic dynamics, with implications for long-term sustainable development in the region. As a key participant in this interdisciplinary project, I am mainly responsible for the research on the threshold for the development and utilization of water and sediment resources in different areas of the Yellow River Basin.

PUBLICATIONS

- [1] **Bao, X.**, He, J., Wang, Z., Zhang, D., and Cui, X. (2025). “Research status, challenges and prospects of the utilization of Yellow River sediment resources.” *Journal of Sediment Research*, 50(04), 73-80.

PROFESSIONAL PRESENTATIONS

[Oral Presentation] **Co-evolution mechanism of water-sediment resources and economic development from a governing perspective in the Yellow River Basin.**

National Academic Forum for Hydraulic Engineering Postgraduates, Wuhan, China *May 29, 2025*

[Oral Presentation] **A cross-scale coupling study on water-sediment and economic development in the yellow river basin based on urban agglomeration scale.**

2nd Hydrological Process Forum, Guangzhou, China *Apr 20, 2025*

[Oral Presentation] **Cross-scal ecoupling of water-sediment resources and socio-economic system interactions in the Yellow River Basin over different periods.**

Innovation Academic Forum of Faculty of Engineering and Geography NXU, Yinchuan, China *Oct 17, 2024*

HONORS AND AWARDS

2nd prize in the 11th China College Students' Statistical Modeling Competition *Aug 2025*

3rd prize in National Academic Forum for Hydraulic Engineering Postgraduates *May 2025*

2nd prize in Innovation Academic Forum of Faculty of Engineering and Geography NXU *Nov 2024*

Merit Student of Henan Province *Oct 2021*

2nd prize in China Undergraduate Mathematical Contest in Modeling *Dec 2020*

GRANTS AND SCHOLARSHIPS

Postgraduate Innovation Project of Ningxia University (6,000 CNY) *May 2025*

Ningxia University Scholarship (3,000 CNY) *Nov 2024*

Zhongyuan University of Technology Scholarships (once 2nd & twice 3rd prize, 2,000 CNY) *Dec 2018 – Dec 2021*

OTHER EXPLORATIONS

[Participated] **Field trip of watershed planning and management**

Tsinghua University funded exploration *Jun 30, 2024 – Jul 06, 2024*