Yu Ding

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EDUCATION BACKGROUND

Hohai University *Nanjing, China / Sep.2021~Jun.2024*

M.Eng. in Hydrology and Water Resources **Average Score: 89.45/100**

Thesis: Precipitation Data Merging and Hydrology Application Based on Machine Learning in the Yellow River Source Region of China

China Three Gorges University *Yichang, China / Sep.2017~Jun.2021*

B. Eng. in Hydrology and Water Resources Engineering **GPA:3.629/4 (Rank:1/64)**

Thesis: Simulation of non-point source pollution in the Xiangxi River Basin based on SWAT model (University outstanding undergraduate thesis)

PUBLICATIONS

*Jiang S., **Ding Y.**, Liu R., Wei L., Liu Y., Ren M., Ren L., 2022. Assessing the Potential of IMERG and TMPA Satellite Precipitation Products for Flood Simulations and Frequency Analyses over a Typical Humid Basin in South China. Remote Sen. 14, 4406. https://doi.org/10.3390/rs14174406*

RESEARCH EXPERIENCES

Improved accuracy of near real-time satellite precipitation products (SPPs) in the source region of the Yellow River *Oct.2022~ Jun.2024*

- *Assessed the accuracy of different near-real-time satellite precipitation products (GSMaP-MVK, GSMaP-NRT, IMERG-Early, IMERG-Late) at different spatial and temporal scales benchmarked against rainfall station observations.*
- *Applied a coupled Cumulative Distribution Function (CDF) matching and linear correction method to reduce the biases of SPPs.*
- *Trained different machine learning models (Random Forest, Extreme Gradient Boosting, Support Vector Machine Regression, Convolutional Neural Network) to fuse the corrected SPPs, with covariates derived from elements of ERA5-land.*
- *Constructed Variable Infiltration Capacity (VIC) hydrological model to simulate daily runoff driving by rain gauge and satellite precipitation.*

Evaluated the Potential of IMERG and TMPA Satellite Precipitation Products for Flood Simulations and Frequency Analyses *Sep.2021~ Sep.2022*

- *Assessed the accuracy of five sets of satellite precipitation products (IMERG-Early, IMERG-Late, IMERG-Final, TMPA-3B42RT and TMPA-3B42V7) for daily precipitation and extreme precipitation events estimation.*
- *Compared the modeling capability of satellite precipitation products in daily streamflow simulations and flood event simulations using a grid-based Xinanjiang model.*

Project: Research on Flood Forecasting of Reservoirs in Small and Medium-sized Watersheds in Karst Mountainous Areas of Guizhou Province *Jul.2021~Dec.2021*

- *Coded the program of XAJ hydrological model for flood simulation and completed parameters calibration based on SCE-UA algorithm.*
- *Applied sub-daily satellite precipitation products to forecast flooding in the Wangmo Basin of Guizhou Province.*
- *Collected underground water level data to construct the topology of the groundwater system.*

Identified critical areas of non-point source pollution in the Xiangxi River Basin *Jan.2021~Jun.2021*

- *Applied the SWAT model to simulate runoff and nitrogen and phosphorus contaminant loads in the Xiangxi River Basin to identify critical areas of non-point source pollution.*
- *Compared and validated runoff simulation results of CMADS dataset and rain gauge precipitation in a small watershed.*
- *Quantified the pollution output mitigation effects under different BMPs and explored the optimal solution for non-point source pollution.*

Project: Survey and Evaluation of Consolidation and Upgrading of Rural Drinking Water Safety in Rural Migrant Settlement Areas of Three Gorges Chongqing Reservoir Area *Sep.2020~Dec.2020*

- *Acquired data on the scale of water supply, water quality control, purification and disinfection facilities and operation through visits to the public, household surveys, field visits to reservoirs, waterworks and other water supply projects and water source locations.*
- *Summarized and statistically analyzed the data collected and reviewed their reliability.*

Characteristics of nitrogen and phosphorus output from Zhijiang River *Mar.2018~Jun.2018*

- *Participated in the sampling of water quality samples.*
- *Monitored the concentration of nutrients ($NH_4^+ - N, NO_3^- - N, PO_4^{3-} - P, DTN, TN, DTP,\ TP$) in the water and analyzed the data.*

EXTRA-CURRICULAR ACTIVITIES

Assistant counsellor at the College of International Education, HHU *Sep.2022~ Sep.2023*

- *Coordinated with various departments to ensure international student orientation and registration process, including visa verification, health insurance enrollment, and campus tour arrangements.*
- *Provided necessary information and guidance to international students regarding academic requirements, course selection, and university policies.*
- *Verified scholarship recipients' account details to ensure accurate and timely disbursement of funds.*

Member of the graduate editorial department, HHU *Sep.2021~ Sep.2022*

- *Operated and managed the official WeChat public account.*
- *Collaborated with content creators and editors to ensure accurate and engaging articles, images, and videos are formatted appropriately and aligned with the brand's style and tone.*
- *Respond promptly and professionally to comments, inquiries, and messages from WeChat followers.*

Volunteer in the 5th International Symposium on Shallow Flows. *Oct.2021*

HONORS & AWARDS

North China Water Resources Scholarship, Hohai University *2022*
First Prize of Academic Scholarship for the First Phase of Postgraduate Studies, Hohai University *2021*
Graduate Freshman Merit Scholarship, Hohai University *2021*
Quest for Knowledge scholarship of China Three Gorges University *2021*
Zhang Guangdou scholarship, Education Foundation of Tsinghua University *2021*
Second Price, Liu Guangwen scholarship, Hydraulic Engineering Association, China *2021*
Grand Prize for Translation in the 26th Hubei Provincial Translation Competition *2020*
Mathematical Contest in Modeling Interdisciplinary Contest in Modeling: Meritorious Winner *2020*
Hubei Hydropower Engineering Society Scholarship for Outstanding Students *2020*

SKILLS & LANGUAGES

- *Proficient in running SWAT, VIC and XAJ hydrological models.*
- *Capacity in programming: Good at MATLAB, Python and familiar with Java.*
- *Capacity in professional software: Good at ArcGIS, Auto-CAD, Origin and familiar with SWMM, ENVI.*
- *Languages: Mandarin (Native), English (IELTS: 6.5)*