

## CURRICULUM VITAE

### PERSONAL INFORMATION:

Name:

Liang-Jun Zhu (朱良君)

Position:

Associate Professor

Business Address:

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Languages:

Chinese, English

Websites:Homepage <https://zhulj.net>Github <https://github.com/crazyzlj>Academic pages [Google Scholar](#), [Web of Science](#), [ORCID](#), [ResearchGate](#)

### RESEARCH INTERESTS:

Watershed process modeling framework, spatiotemporal optimization of watershed management practices (BMPs)

### EDUCATION:

- |           |                                                                                                                                                                                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2014–2019 | <b>Ph.D.</b> (GIS), University of Chinese Academy Sciences, Beijing, P.R.C.<br><b>Dissertation:</b> Method of optimizing spatial configuration of beneficial watershed management practices in a unit-boundary adaptive manner<br><b>Supervisors:</b> Professor <a href="#">A-Xing Zhu</a> and Professor <a href="#">Cheng-Zhi Qin</a> |
| 2011–2014 | <b>M.Sc.</b> (Physical Geography), Beijing Normal University, Beijing, P.R.C.<br><b>Thesis:</b> A laser scanner for surface roughness and rill morphology measurement based on linear structured light<br><b>Supervisor:</b> Professor <a href="#">Guang-Hui Zhang</a>                                                                 |
| 2007–2011 | <b>B.Sc.</b> (GIS), Northwest A&F University, Yangling, Shaanxi, P.R.C.                                                                                                                                                                                                                                                                |

### PROFESSIONAL EMPLOYMENT:

- |                     |                                                                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/2023 to date:    | Associate Professor, LREIS, IGSNRR, CAS                                                                                                                                                                       |
| 07/2019 to 12/2023: | Assistant Professor, State Key Laboratory of Resources and Environmental Information System (LREIS), Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy Sciences (CAS) |

### AWARDS, HONORS, AND SCHOLARSHIPS:

- |           |                                                                           |
|-----------|---------------------------------------------------------------------------|
| 2012–2013 | National scholarship for graduate students, Beijing Normal University     |
| 2007–2008 | National scholarship for undergraduate students, Northwest A&F University |

## PUBLICATIONS AND RESEARCH PAPERS:

As of Jan. 2024, totally 16 peer-reviewed journal articles (including 8 SCI/SSCI-indexed papers) as the first author and/or corresponding author, 13 peer-reviewed journal articles (including 7 SCI/SSCI-indexed papers) as co-author have been published.

Journal Articles of first/co-first (#)/corresponding author (\*):

- [16] Shen, S., Qin, C.-Z., **Zhu, L.-J.\***, Zhu, A.-X. **2023**. From scenario to roadmap: Design and evaluation of a web-based participatory watershed planning system for optimizing multistage implementation plans of management practices under stepwise investment. *Journal of Environmental Management*, 342: 118280. doi:10.1016/j.jenvman.2023.118280 ([SCI](#))
- [15] Shen, S., Qin, C.-Z., **Zhu, L.-J.\***, Zhu, A.-X. **2023**. Optimizing the implementation plan of watershed best management practices with time-varying effectiveness under stepwise investment. *Water Resources Research*, 59(6): e2022WR032986. doi:10.1029/2022WR032986 ([SCI](#))
- [14] Wu, T., **Zhu, L.-J.\***, Shen, S., Zhu, A.-X., Shi, M., Qin, C.-Z., **2023**. Identification of watershed priority management areas based on landscape positions: An implementation using SWAT+. *Journal of Hydrology*, 619: 129281. doi:10.1016/j.jhydrol.2023.129281 ([SCI](#))
- [13] **Zhu, L.-J.**, Qin, C.-Z.\*, Zhu, A.-X., **2021**. Spatial optimization of watershed best management practice scenarios based on boundary-adaptive configuration units. *Progress in Physical Geography: Earth and Environment*, 45(2): 207–227. doi:10.1177/0309133320939002 ([SCI](#), SSCI)
- [12] **Zhu, L.-J.**, Liu, J.\*, Qin, C.-Z.\*, Zhu, A.-X., **2019**. A modular and parallelized watershed modeling framework. *Environmental Modelling & Software*, 122: 104526. doi:10.1016/j.envsoft.2019.104526 ([SCI](#))
- [11] **Zhu, L.-J.**, Qin, C.-Z.\*, Zhu, A.-X., Liu, J., Wu, H., **2019**. Effects of different spatial configuration units for the spatial optimization of watershed best management practice scenarios. *Water*, 11(2): 262. doi:10.3390/w11020262 ([SCI](#))
- [10] Qin, C.-Z., Gao, H.-R., **Zhu, L.-J.\***, Zhu, A.-X., Liu, J.-Z., Wu, H., **2018**. Spatial optimization of watershed best management practices based on slope position units. *Journal of Soil and Water Conservation*, 73(5): 504–517. doi:10.2489/jswc.73.5.504 ([SCI](#))
- [9] **Zhu, L.-J.**, Zhu, A.-X., Qin, C.-Z.\*, Liu, J.-Z., **2018**. Automatic approach for deriving fuzzy slope positions. *Geomorphology*, 304:173–183. doi:10.1016/j.geomorph.2017.12.024 ([SCI](#))
- [8] Qin, C., **Zhu, L.\***, Shen, S., Wu, T., Xiao, G., Wu, S., Chen, Y., Wang, X., Feng, X., Zhu, A., Lu, F., **2024**. Methods for supporting decision-making of precision watershed management based on watershed system simulation and scenario optimization. *ACTA GEOGRAPHICA SINICA (in Chinese with English abstract)*, 79(1):xx-xx. [秦承志, **朱良君\***, 申申, 吴彤, 肖桂荣, 吴升, 陈芸芝, 汪小钦, 冯险峰, 朱阿兴, 陆锋. **2024**. 基于流域系统模拟—情景优化的精细治理决策支持方法. *地理学报*, 79(1):xx-xx.] doi:10.11821/dlxb202401005 (EI, CSCD)
- [7] Shi, Y., **Zhu, L.\***, Qin, C., Zhu, A., **2021**. Spatial optimization of watershed best management practices based on slope position-field units. *Journal of Geo-information Science (in Chinese with English abstract)*, 23(4):564–575. [史亚星, **朱良君\***, 秦承志, 朱阿兴. **2021**. 基

- 于坡位-地块单元的流域最佳管理措施空间优化配置方法. 地球信息科学学报, 23(4):564-575.] doi:10.12082/dqxxkx.2021.200335 ([EI](#))
- [6] Zhu, A.-X., **Zhu, L.-J.\***, Shi, Y., Qin, C.-Z., Liu, J., **2019**. Integrated watershed modeling and scenario analysis: a new paradigm for integrated study of physical geography? *Progress in Geography (in Chinese with English abstract)*, 38(8):1111-1122. [朱阿兴, **朱良君\***, 史亚星, 秦承志, 刘军志. **2019**. 流域系统综合模拟与情景分析——自然地理综合研究的新范式? 地理科学进展, 38(8):1111-1122.] doi:10.18306/dlkxjz.2019.08.001 ([CSCD](#))
- [5] Wang, L., **Zhu, L.-J.\***, Zhu, A.-X., Liu, J.-Z., Shen, L., **2016**. Effect of spatial unit delineation on simulating non-point source pollution by SWAT model. *Journal of Shenyang Agricultural University (in Chinese with English abstract)*, 47(4):460-466. [王琳, **朱良君\***, 朱阿兴, 刘军志, 沈琳. **2016**. SWAT模型非点源污染模拟对空间单元划分的响应. 沈阳农业大学学报, 47(4):460-466.] doi:10.3969/j.issn.1000-1700.2016.04.012 ([CSCD](#))
- [4] **Zhu, L.-J.**, Zhang, G.-H.\*, Li, Z.-W., Geng, R., **2015**. A laser scanner system for rill morphology measurement based on linear structured light. *Mountain Research (in Chinese with English abstract)*, 33(6):770-776. [**朱良君**, 张光辉\*, 李振炜, 耿韧. **2015**. 一种基于线结构光技术的细沟形态测量系统. 山地学报, 33(6):770-776.] doi:10.16089/j.cnki.1008-2786.000093 ([CSCD](#))
- [3] **Zhu, L.-J.**, Zhang, G.-H.\*. **2013**. Review of measurement and quantification of surface microtopography. *Science of Soil and Water Conservation (in Chinese with English abstract)*, 11(5):114-122. [**朱良君**, 张光辉\*. **2013**. 地表微地形测量及量化方法研究综述. 中国水土保持科学, 11(5):114-122.] doi:10.16843/j.sswc.2013.05.018 ([CSCD](#))
- [2] **Zhu, L.-J.**, Zhang, G.-H.\*, Hu, G.-F., Wang, B., **2013**. Study on evaluating ultrasonic measurement system of overland flow depth. *Journal of Soil and Water Conservation (in Chinese with English abstract)*, 27(1):235-239. [**朱良君**, 张光辉\*, 胡国芳, 王兵. **2013**. 坡面流超声波水深测量系统研究. 水土保持学报, 27(1):235-239.] doi:10.13870/j.cnki.stbcxb.2013.01.044 ([CSCD](#))
- [1] **Zhu, L.-J.**, Zhang, G.-H.\*, Ren, Z.-P., **2012**. Comparing four methods for soil infiltration measurement. *Bulletin of Soil and Water Conservation (in Chinese with English abstract)*, 32(6):163-167. [**朱良君**, 张光辉\*, 任宗萍. **2012**. 4种土壤入渗测定方法的比较. 水土保持通报, 32(6):163-167.] doi:10.13961/j.cnki.stbctb.2012.06.050 ([CSCD](#))

#### Journal Articles of co-author:

- [13] Fan, X., Fan, N., Qin, C.-Z., Zhao, F.-H., **Zhu, L.-J.**, Zhu, A.-X., **2023**. Large-area soil mapping based on environmental similarity with adaptive consideration of spatial distance to samples. *Geoderma*, 439, 116683. doi:10.1016/j.geoderma.2023.116683 ([SCI](#))
- [12] Fan, N.-Q., Zhao, F.-H., **Zhu, L.-J.**, Qin, C.-Z., Zhu, A.-X., **2022**. Digital soil mapping with adaptive consideration of the applicability of environmental covariates over large areas. *International Journal of Applied Earth Observation and Geoinformation*, 113, 102986. doi:10.1016/j.jag.2022.102986 ([SCI](#))
- [11] Liu, J., Fang, P., Que, Y., **Zhu, L.-J.**, Duan, Z., Tang, G., Liu, P., Ji, M., Liu, Y., **2022**. A dataset of lake-catchment characteristics for the Tibetan Plateau. *Earth System Science Data*, 14(8): 3791-3805. doi:10.5194/essd-14-3791-2022 ([SCI](#))

- [10] Wang, Y.-W., Qin, C.-Z.\*, Cheng, W.-M., Zhu, A.-X., Wang, Y.-J., **Zhu, L.-J.**, 2022. Automatic crater detection by training random forest classifiers with legacy crater map and spatial structural information derived from digital terrain analysis. *Annals of the American Association of Geographers*, 112(5): 1328–1349. doi:10.1080/24694452.2021.1960473 ([SSCI](#))
- [9] Wang, L., Zhang, G.\*, **Zhu, L.**, Wang, H., 2017. Biocrust wetting induced change in soil surface roughness as influenced by biocrust type, coverage and wetting patterns. *Geoderma*, 306:1–9. doi:10.1016/j.geoderma.2017.06.032 ([SCI](#))
- [8] Ren, Z.\*, **Zhu, L.**, Wang, B., Cheng, S., 2016. Soil hydraulic conductivity as affected by vegetation restoration age on the Loess Plateau. *Journal of Arid Land*, 8(4):546–555. doi:10.1007/s40333-016-0010-2 ([SCI](#))
- [7] Wang, B., Zhang, G.\*, Shi, Y., Zhang, X.C., Ren, Z., **Zhu, L.**, 2013. Effect of natural restoration time of abandoned farmland on soil detachment by overland flow in the Loess Plateau of China. *Earth Surface Processes and Landforms*, 38(14):1725–1734. doi:10.1002/esp.3459 ([SCI](#))
- [6] Gao, H.-R., Qin, C.-Z.\*, **Zhu, L.-J.**, Zhu, A.-X., Liu, J.-Z., Wu, H., 2018. Using slope positions as spatial units for optimizing spatial configuration of watershed management practices. *Journal of Geo-information Science (in Chinese with English abstract)*, 20(6):781–790. [高会然, 秦承志\*, **朱良君**, 朱阿兴, 刘军志, 吴辉. 2018. 以坡位为空间配置单元的流域管理措施情景优化方法. 地球信息科学学报, 20(6):781–790.] doi:10.12082/dqxxkx.2018.170622 ([CSCD](#))
- [5] Gao, H.-R., Shen, L., Liu, J.-Z.\*, Zhu, A.-X., Qin, C.-Z., **Zhu, L.-J.**, 2017. Review on the simulation of non-point source pollution in the Hilly region of Southern China. *Journal of Geo-information Science (in Chinese with English abstract)*, 19(8):1080–1088. [高会然, 沈琳, 刘军志\*, 朱阿兴, 秦承志, **朱良君**. 2017. 中国南方丘陵区非点源污染过程模拟研究进展. 地球信息科学学报, 19(8):1080–1088.] doi:10.3724/SP.J.1047.2017.01080 ([CSCD](#))
- [4] Jiang, J.-C., Yu, J., Qin, C.-Z., Liu, J.-Z.\*, Li, R.-K., **Zhu, L.-J.**, Zhu, A.-X., 2017. A knowledge-driven method for intelligent setting of parameters in hydrological modeling. *Geomatics and Information Sciences of Wuhan University (in Chinese with English abstract)*, 42(4):525–530. [江净超, 余洁, 秦承志, 刘军志\*, 李润奎, **朱良君**, 朱阿兴. 2017. 知识驱动下的水文模型参数智能化设置方法. 武汉大学学报·信息科学版, 42(4):525–530.] doi:10.13203/j.whugis20150044 ([EI](#), [CSCD](#))
- [3] Liu, J.-Z., Zhu, A.-X.\*, Qin, C.-Z., Jiang, J.C., **Zhu, L.-J.**, Shen, L., 2015. Parallel computing of watershed process simulation guided by geographical laws. *Journal of Geo-information Science (in Chinese with English abstract)*, 17(5):506–514. [刘军志, 朱阿兴\*, 秦承志, 江净超, **朱良君**, 沈琳. 2015. 论地理规律对流域过程模拟并行计算的指导作用. 地球信息科学学报, 17(5):506–514.] doi:10.3724/SP.J.1047.2015.00506 ([CSCD](#))
- [2] Hu, G.-F., Zhang, G.-H.\*, **Zhu, L.-J.**, 2015. Comparison of three methods to measure depth of overland flow. *Bulletin of Soil and Water Conservation (in Chinese with English abstract)*, 35(3):152–156. [胡国芳, 张光辉\*, **朱良君**. 2015. 3种坡面流水深测量方法比较. 水土保持通报, 35(3):152–156.] doi:10.13961/j.cnki.stbctb.2015.03.034 ([CSCD](#))
- [1] Geng, R., Zhang, G.-H.\*, Li, Z.-W., Hu, G.-F., Wang, H., **Zhu, L.-J.**, 2014. Variation of physical properties and soil organic matter based on the method of stratified sampling. *Journal*

*of Soil and Water Conservation (in Chinese with English abstract)*, 28(6):194–199+205.  
 [耿轲, 张光辉\*, 李振伟, 胡国芳, 王浩, 朱良君. 2014. 基于分层抽样法的小流域土壤物理性质和有机质差异特征. 水土保持学报, 28(6):194–199+205.] doi:10.13870/j.cnki.stbcxb.2014.06.036  
 (CSCD)

#### Book chapters and entries:

- [1] Qin, C.-Z., **Zhu, L.-J.**, 2020. GDAL/OGR and Geospatial Data IO Libraries. The Geographic Information Science & Technology Body of Knowledge (4th Quarter 2020 Edition), John P. Wilson (Ed.). doi:10.22224/gistbok/2020.4.1

### RESEARCH ACTIVITIES

#### As Principal Investigator (PI) or Co-PI in research projects:

- [3] "Design and development of geospatial intelligent analysis and computing engine", National Key Research and Development Program (No. 2021YFB3900904), 12/2021–11/2024, **¥1,000,000** (Chinese Yuan)
- [2] "Study on hydrological modeling method considering spatiotemporal heterogeneity of large watershed", Youth Project of Innovation LREIS (YPI005), 11/2022–12/2024, **¥300,000** (Chinese Yuan)
- [1] "Spatial optimization of watershed management practices based on nested geographic objects", National Natural Science Foundation of China for Young Scientists Fund (No. 42101480), 2022–2024, **¥300,000** (Chinese Yuan)

#### Participating in research projects:

- [6] "Decision support for water environment supervision and water pollution prevention and control in the Minjiang River Basin", Strategic Priority Research Program of the Chinese Academy of Sciences (No. XDA23100503), 2019–2023, PI: Cheng-Zhi Qin
- [5] "Slope position as spatial unit for optimizing scenarios of Beneficial Watershed Management Practices (BMPs) in a unit-boundary adaptive manner", National Natural Science Foundation of China (No. 41871362), 2019–2022, PI: Cheng-Zhi Qin
- [4] "Scenario analysis of organic waste management in Dianbuhe watershed", National Key Technology Innovation Project for Water Pollution Control and Remediation (No. 2013ZX07103006-005), 2013–2016, PI: A-Xing Zhu
- [3] "Development of parallel algorithm for spatial statistics and geographical process simulation", National High-Tech Research and Development Program of China (No. 2011AA120305), 2011–2013, PI: A-Xing Zhu
- [2] "Hundred Talents Program" of the Chinese Academy of Sciences, 2012–2014, PI: Guang-Hui Zhang
- [1] "Research on experimental techniques of soil erosion", Independent research project of State Key Laboratory of Earth Surface Processes and Resource Ecology (No. 2012-ZY-02), 2012–2013, PI: Guang-Hui Zhang

#### Conference Oral Presentations:

- [5] A modular and parallelized modeling framework for distributed watershed modeling and

- scenario analysis. *28<sup>th</sup> International Conference on Geoinformatics* (Online), Nov. 3–5, **2021**. Nanchang, Jiangxi, China.
- [4] New optimization framework of watershed best management practice scenarios in a unit-boundary adaptive manner. *10th iEMSs Conference* (Online), Sep. 14–18, **2020**. Brussels.
- [3] Development of a modular and parallelized watershed modeling framework. *1st Regional Conference on Environmental Modeling and Software (Asian Region)*, May. 18–20, **2019**. Nanjing, China.
- [2] An automatic approach of prototype-based fuzzy slope positions. *AAG Annual Meeting*, Apr. 5–9, **2017**. Boston, USA.
- [1] Automatic approach for deriving fuzzy slope positions. *33rd International Geographical Congress (IGC)*, Aug. 21–25, **2016**. Beijing, China.

## PROFESSIONAL SERVICES:

### Manuscripts reviewed:

Journal of Environmental Management: 2023(1)  
 Geoscientific Model Development: 2021(1)  
 Environmental Modelling and Software: 2023(2), 2022(2)  
 Soil Science Society of America Journal: 2021(1)  
 Land Use Policy: 2022(1), 2021(1)  
 Water Resources Management: 2023(3), 2022(3), 2021(1), 2020(1)  
 International Soil and Water Conservation Research: 2022(1), 2018(1)  
 ISPRS International Journal of Geo-Information: 2023(1)  
 Heliyon: 2024(1)  
 Sustainability: 2023(1)  
 Annals of GIS: 2023(1), 2022(4), 2020(1)  
 Current Research in Environmental Sustainability: 2022(1)  
 Frontiers in Earth Science: 2022(1)  
 Journal of Agricultural Science and Technology: 2019(1)  
 Earthquake Research Advances: 2022(1)  
 Environmental Engineering and Management Journal: 2023(1)  
 水文: 2021(1)  
 中国水土保持科学: 2015(1)