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吴磊

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吴磊, 男, 汉族, 河南开封人, 博士, 副教授, 硕士生导师。长期从事水力学与流域水环境模拟的教学与科研工作。2016年5月入选“陕西省科技新星”(陕西省创新人才推进计划), 2016年12月入选首批“仲英青年学者”。

1. 主要学术经历

2017-2018 美国 加州大学伯克利分校 (UC Berkeley) 土木与环境工程系 博士后访问学者

2015-今 西北农林科技大学水利与建筑工程学院 副教授

2012-2014 西北农林科技大学水利与建筑工程学院 讲师

2012年获重庆大学城市环境与生态工程博士学位 (水文水环境方向)

2010 - 2011 美国 加州大学欧文分校 (UC Irvine) 水文与水环境研究中心 中美联合培养博士生

2008年获重庆大学市政工程硕士学位 (水文水环境方向)

2. 研究方向

以“高侵蚀丘陵区农业非点源污染模拟理论与控制技术”为中心, 围绕“流域水沙输移动力学”与“非点源污染模拟与控制”两个方向开展“分布式水文模拟, 侵蚀产沙、污染物运移、情景模拟、BMPs空间配置优化、反演模拟, 不确定性分析、时空尺度转换, 土壤物理化学微生物, 水沙传质数值模拟、低影响开发 (LID)、水质目标管理”等前沿基础科学和应用基础科学研究。

3. 主讲课程

本科生: 先后承担《水力学》、《水力学实验》、《水处理工程》、《水利工程概论》等课程。

研究生: 先后主讲《水环境理论与方法》、《环境水力学》、《非点源污染模拟》、《分布式水文模型》、《农业水土工程概论》等课程。

4. 学术兼职

兼任四川省生态文明促进会第一届专家委员会青年专家, 中国水土保持学会会员, 国家自然科学基金青年、面上、地区、海外通讯评审专家, 担任Science of the Total Environment, Land Degradation & Development, Environmental Science & Technology, Journal of Environmental Informatics, Water Research, Environmental Modelling & Software, Journal of Environmental Quality, Separation & Purification Reviews, Environmental Science and Pollution Research, Environmental Earth Sciences, Journal of Mountain Science, Environmental Management, SCIENCE CHINA Earth Sciences, International Soil and Water Conservation Research等30余个国内外期刊经常审稿人。

5. 科研项目

先后主持国家自然科学基金面上项目1项、青年项目1项, 教育部博士点基金1项, 陕西省科技新星支持项目1项, 仲英青年学者项目1项, 国家重点实验室开放基金1项, 国家重点研发计划专题子任务1项, 校级国际科

技合作项目1项, 其他项目6项。参加国家自然科学基金面上项目1项, 曾参研国家水专项、国家科技支撑计划、中科院西部行动计划等项目。

主要代表性项目:

- [1] 国家自然科学基金面上项目: 黄土丘陵沟壑区水-沙-吸附态与溶解态非点源污染物多时空尺度耦合运移机理研究, 2017/01-2020/12, 主持
- [2] 国家自然科学基金青年项目, 黄土高原小流域吸附态非点源污染过程模拟与调控研究, 2014/01-2016/12, 主持
- [3] 陕西省创新人才推进计划—青年科技新星项目, 延河流域非点源污染控制措施空间配置优化研究, 2017/01-2019/12, 主持
- [4] 仲英青年学者项目, 黄土丘陵区水-沙-非点源氮磷流失多尺度耦合特征及控制措施优化研究, 2017/01-2019/12, 主持
- [5] 教育部博士点基金, 黄土高原小流域非点源氮磷流失形态模拟研究, 2014/01-2016/12, 主持
- [6] 黄土高原土壤侵蚀与旱地农业国家重点实验室开放基金, 黄土高原小流域吸附态氮磷非点源污染分布式模型研究, 2014/01-2016/07, 主持
- [7] 国家重点研发计划专题子任务, 水资源协同配置方案效益可行性分析, 2016/07-2019/12, 主持

6. 主要论著

先后在《Journal of Hydrology》、《Journal of Cleaner Production》、《Environmental Science and Pollution Research》、《Science of the Total Environment》、《Solid Earth》、《Scientific Reports》、《Catena》、《Environmental Earth Sciences》、《Environmental Monitoring and Assessment》、《Water Policy》、《Water Environmental Research》、《Environmental Engineering Science》、《Water Science and Technology》、《Ecological Modelling》、《农业工程学报》、《中国环境科学》、《环境科学研究》、《农业环境科学学报》、《应用力学学报》等本领域国内外重要期刊发表论文66篇, 其中SCI论文43篇(第一作者35篇)。据Google Scholar查询, 发表的SCI论文共被引用450余次; 据Research Gate查询, 共被引用350余次; 据Web of Science核心合集查询, 共被引用266次, 他引191次, 以第一作者发表在Journal of Hydrology论文单篇他引55次。另外, 以第一作者公开发明专利4件, 授权实用新型5件。

在黑龙江教育(高教研究与评估)等期刊以第一作者发表了《以高素质工程人才培养为目标的“水力学”教学新模式研究》等主题的教改论文4篇。

主要代表性论文:

- [1] Wu, L., Yao, W.W., Ma, X.Y. (2018). Using the comprehensive governance degree to calibrate a piecewise sediment delivery ratio algorithm for dynamic sediment predictions: A case study in an ecological restoration watershed of northwest China. *Journal of Hydrology*, 564, 888-899. (SCI)
- [2] Wu, L., Su, X.L., Ma, X.Y., Kang, Y., Jiang, Y.N. (2018). Integrated modeling framework for evaluating and predicting the water resources carrying capacity in a continental river basin of Northwest China. *Journal of Cleaner Production*, completely accepted. (SCI)
- [3] Wu, L., Qiao, S.S., Peng, M.L., Ma, X.Y. (2018). Assessing impacts of rainfall intensity and slope on dissolved and adsorbed nitrogen loss under bare loessial soil by simulated rainfalls. *Catena*, 170, 51-63. (SCI)
- [4] Wu, L., Jiang, J., Li G.X., Ma, X.Y. (2018). Characteristics of pulsed runoff-erosion events under typical rainstorms in a small watershed on the Loess Plateau of China. *Scientific Reports*, 8:3672. (SCI)
- [5] Wu, L., Qiao, S.S., Peng, L.L., Ma, X.Y. (2018). Coupling loss characteristics of runoff-sediment-adsorbed and dissolved nitrogen and phosphorus on bare loess slope. *Environmental Science and Pollution Research*, 25(14), 14018-14031. (SCI)
- [6] Wu, L., Liu, X., Ma, X.Y. (2018). Prediction of land use change and its driving forces in an ecological restoration watershed of the loess hilly region. *Environmental Earth Sciences*, 77:238. (SCI)
- [7] Wu, L., Tang, X.D., Ma, X.Y. (2018). Optimal allocation of nonpoint source pollution control measures using two modern comprehensive evaluation methods. *Water Policy*, 20: 811-825. (SCI)
- [8] Wu, L., Peng M.L., Qiao S.S., Ma X.Y. (2018). Effects of rainfall intensity and slope gradient on runoff and sediment yield characteristics of bare loess soil. *Environmental Science and Pollution Research*, 25(4): 3480-3487. (SCI)
- [9] Wu L., Liu, X., Ma, X.Y. (2018). Spatio-temporal temperature variations in the Chinese Yellow River basin from 1981 to 2013. *Weather*, 73(1): 27-33. (SCI)

- [10] Wu, L., Chang, H.Y., Ma, X.Y. (2017). A modified method for pesticide transport and fate in subsurface environment of a winter wheat field of Yangling, China. *Science of the Total Environment*, 609: 385 - 395. (SCI)
- [11] Wu, L., Qi, T., Zhang, J. (2017). Spatiotemporal variations of adsorbed nonpoint source nitrogen pollution in a highly erodible Loess plateau watershed. *Polish Journal of Environmental Studies*, 26(3): 1343-1352. (SCI)
- [12] Wu, L., Liu, X., Ma, X.Y. (2016). Application of a modified distributed-dynamic erosion and sediment yield model in a typical watershed of a hilly and gully region, Chinese Loess Plateau. *Solid Earth*, 7(6): 1577-1590. (SCI)
- [13] Wu, L., Liu, X., Ma, X.Y. (2016). Spatio-temporal variation of erosion-type non-point source pollution in a small watershed of hilly and gully region, Chinese Loess Plateau. *Environmental Science and Pollution Research*, 23: 10957-10967. (SCI)
- [14] Wu, L., Liu, X., Ma, X.Y. (2016). Spatio-temporal evolutions of precipitation in the Yellow River basin of China from 1981 to 2013. *Water Science & Technology: Water Supply*, 16(5): 1441-1450. (SCI)
- [15] Wu, L., Liu, X., Ma, X.Y. (2016). Spatiotemporal distribution of rainfall erosivity in the Yanhe River watershed of hilly and gully region, Chinese Loess Plateau. *Environmental Earth Sciences*, 75: 315. (SCI)
- [16] Wu, L., Liu, X., Ma, X.Y. (2016). Pesticide exposure levels in an apple-orchard catchment of Changwu Tableland, Chinese Loess Plateau. *Fresenius Environmental Bulletin*, 25(12a): 5904-5917. (SCI)
- [17] Wu, L., Liu, X., Ma, X.Y. (2016). Tracking Soil Erosion Changes in an Easily-Eroded Watershed of the Chinese Loess Plateau. *Polish Journal of Environmental Studies*, 25(1): 332-344. (SCI)
- [18] Wu, L., Li, P.C., Ma, X.Y. (2016). Estimating nonpoint source pollution load using four modified export coefficient models in a large easily eroded watershed of the loess hilly-gully region, China. *Environmental Earth Sciences*, 75: 1056. (SCI) (SCI)

- [19] Wu, L., Gao, J.E., Ma, X.Y., Li, D. (2015) Application of modified export coefficient method on the load estimation of non-point source nitrogen and phosphorus pollution of soil and water loss in semiarid regions. *Environmental Science and Pollution Research*, 22: 10647-10660. (SCI)
- [20] Wu, L., Chang, H.Y., Ma, X.Y. (2015). Insecticide transport and fate in a small apple-orchard watershed of the hilly and gully region, Loess Plateau. *Fresenius Environmental Bulletin*, 24(8a): 2603-2614. (SCI)
- [21] Wu, L., Qi, T., Li, D., Yang, H.J., Liu, G.Q., Ma, X.Y., Gao, J.E. (2015). Current status, problems and control strategies of water resources pollution in China. *Water Policy*, 17(3): 423-440. (SCI)
- [22] Wu, L., Wang, J., Liu, X. (2015). Enhanced nitrogen removal under low-temperature and high-load conditions by optimization of the operating modes and control parameters in the CAST system for municipal wastewater. *Desalination and Water Treatment*, 53: 1683-1698. (SCI)
- [23] Wu, L., Ma, X.Y., Liu, X. (2014) Assessment of herbicide transport and distribution in subsurface environments of an orange field. *Water Environment Research*, 86(8): 729-740. (SCI)
- [24] Wu, L., Long, T.Y., Liu, X., Ma, X.Y. (2013). Modeling impacts of sediment delivery ratio and land management on adsorbed non-point source nitrogen and phosphorus load in a mountainous basin of the Three Gorges reservoir area, China. *Environmental Earth Sciences*, 70(3):1405-1422. (SCI)
- [25] Wu, L., Long, T.Y., Liu, X., Guo, J.S. (2012). Impacts of climate and land-use changes on the migration of non-point source nitrogen and phosphorus during rainfall-runoff in the Jialing River Watershed, China. *Journal of Hydrology*, 475: 26-41. (SCI)
- [26] Wu, L., Long, T.Y., Cooper, W.J. (2012). Simulation of temporal and spatial distribution on dissolved non-point source nitrogen and phosphorus load in Jialing River Watershed, China. *Environmental Earth Sciences*, 65(6), 1795-1806. (SCI)
- [27] Wu, L., Long, T.Y., Liu, X., Mmereki, D. (2012). Simulation of soil loss processes based on rainfall runoff, and the time factor of governance in the Jialing River Watershed, China. *Environmental Monitoring and Assessment*, 184(6): 3731-3748. (SCI)

[28] Wu, L., Long, T.Y., Cooper, W.J. (2012). Temporal and spatial simulation of adsorbed nitrogen and phosphorus non-point source pollution load in Xiao Jiang Watershed of Three Gorges Reservoir Area, China. *Environmental Engineering Science*, 29(4):238-247. (SCI)

[29] Wu, L., Long, T.Y., Lu, X.P. (2012). Improvement of separation efficiency and production capacity of a hydrocyclone. *Water Science and Technology: Water Supply*, 12(3): 281-299. (SCI)

[30] Wu, L., Long, T.Y., Li, C.M. (2010). The simulation research of dissolved nitrogen and phosphorus non-point source pollution in Xiao-Jiang Watershed of Three Gorges Reservoir Area. *Water Science and Technology*, 61(6): 1601-1616. (SCI)

7. 实验室

团队建有水质监测与水环境模拟实验室。实验室拥有美析—紫外可见光分光光度计UV-1700PC、气浴恒温振荡器THZ-92C、高速万能粉碎机LD-Y500A、电热恒温培养箱HH•B11•420-BS-II、TDZ5-WS多管架自动平衡离心机、普通实验冰箱BCD-221WDPT、LDZX-50KBS立式压力蒸汽灭菌器、DRB200数字式消解器、SHZ-D (III) 循环水式抽滤真空泵、电子分析天平FA1004B (0.00001g、0.001g、0.1g)、多级别725080mLINE可调移液器 (1-5000 μ l)、TOMOS移液器EPP (10-200 μ l)、TOMOS枪架、pH计、洁净台、中高端工作站等仪器设备。欢迎报考研究生。

8. 研究生招生

欢迎水文与水资源工程、水利水电工程、农业水利工程、给排水科学与工程、环境工程、环境科学、水土保持与荒漠化防治、地理信息系统、土壤学、土地资源管理、自然地理、计算机科学与技术、应用数学、人工智能等相关专业同学报考!

9. 办公室

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(数据更新至2018年8月)

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