LIUYUE HE

Ph.D.

Hydraulic engineering, Hydrology and Water resources

Research Area: Marine ecosystem assessment; Marine planning and management; Spatial-temporal optimization of water resources; Water-energy-food-carbon nexus

Date of Birth: Feb.07 1993

TEL: (+86) 18813039327

E-mail: hely2018@163.com/ hely@zju.edu.cn

Address: Zheda Road, Dinghai District, Zhoushan, Zhejiang, P. R. China.

Hobbies: Mountain climbing, Badminton, Handicrafts

EDUCATION

- **Ph.D.** China Agricultural University (2016.09~2022.01)
  Major: Hydraulic engineering (Hydrology and Water resources)
  Advisor: Pro. Sufen Wang
  Research Area: Spatial-temporal optimization and estimation of Crop water consumption
- **Visiting student** University of California, Davis, United states (2019.10~2020.09)
  Major: Agricultural engineering
  Advisor: Andre Daccache
  Research Area: Spectral measurement of soil parameters, Research on water consumption of crops by drone
- **MA.Eng.** China Agricultural University (2014.09~2016.06)
  Major: Hydraulic engineering (Hydrology and Water resources)
  Advisor: Pro. Ling Tong
  Research Area: Physiology of plants
- **B.A.** China Agricultural University (2010.09~2014.06)
  Major: Agricultural Irrigation Engineering·
  Advisor: Pro. Ling Tong
  Research Area: Crop water consumption & Agronomic measure

EMPLOYMENT

- **Post Doctor** Ocean college, Zhejiang University, China/ Donghai Laboratory (2023.03~now)
- **Post Doctor** College of Remote Sensing and Information Engineering, Wuhan University, China (2022.04~2022.12)
- **Senior Research Assistant** Shenzhen Institute of Research and Innovation, The University of Hong Kong, China (2022.02~2022.03)
- **Research Assistant** Development Research Center of the Ministry of Water Research of China (2016.06~2019.05)

INTERNATIONAL COMMUNICATIONS

- 2019.08, China Agricultural University Hydraulic Engineering doctoral students to Israel international academic visit exchange, Israel

Topic: Study on spatial optimization of crop water consumption (Oral report)

- 2019.06, China Agricultural University and New Mexico State University had one-on-one exchanges, Beijing, China

Topic: Study on spatial optimization of crop water consumption (Oral report)

- 2018.06, Asian and Oceanian Geoscience Society 2018 Annual Meeting (AOGS2018), Hawaii, USA

Topic: Optimization of spatial and temporal distribution of crop water consumption in middle reaches of Heihe River （Poster）

EXPERIENCE

- ✧ 2020.01~2021.12, Spatial and temporal pattern optimization of regional crop water consumption based on cellular automata model (National Natural Science Foundation project)
- ✧ 2020.01~2021.12, Spatial pattern optimization of crop water demand based on satellite-UAV remote sensing platform (Regional cooperation project of National Natural Science Foundation)
- ✧ 2016.09~2020.12, Efficient water-saving irrigation technology and integrated application in typical agricultural areas of Northwest China (National key research and development program)
- ✧ 2016.09~2018.12, Multi-process coupling and efficient water use regulation of oasis agricultural water conversion in Heihe River Basin (National Natural Science Foundation of China - Major Research Program)
- ✧ 2016.09~2018.12, Demonstration of efficient utilization of water and soil resources in North China (Horizontal project

of the Ministry of Land and Infrastructure)

✧ 2016.06~2016.12, Research and demonstration on Water demand and efficient water use technology of high yield cropland in Huang-Huai-hai (Public welfare industry (agriculture) research special)

ACADEMIC EMPLOYMENT

Reviewers in *Journal of Environmental Management* and *Frontiers in Big Data*

RESEARCH ACHIEVEMENT

I have published 15 papers in English, 3 papers in Chinese and 2 patents. ([#]Co-first author; [*]Corresponding author)

[1] **Liuyue He**, Zhongbin Li, Qian Jia, Zhenci Xu[*]. Soil microplastics pollution in agriculture. ***Science***, 2023, 6632: 547. (Letters) (Q1, IF=63.714)

[2] **Liuyue He**[#], Jingyuan Xue[#], Sufen Wang[*]. WHCrop: A novel water-heat driven crop model for estimating the spatiotemporal dynamics of crop growth for arid region. ***Agricultural Water Management***, 2023, 287: 108410. (Q1, IF=6.611）

[3] **Liuyue He**, Zhenci Xu, Sufen Wang[*], Jianxia Bao, Yunfei Fan, Andre Daccache. Optimal crop planting pattern can be harmful to reach carbon neutrality: Evidence from food-energy-water-carbon nexus perspective. ***Applied Energy***, 2022, 308: 118364. (Q1, IF=11.446)

[4] **Liuyue He**, Jianxia Bao, Andre Daccache, Sufen Wang[*], Ping Guo. Optimize the spatial distribution of crop water consumption based on a cellular automata model: A case study of the middle Heihe River basin, China. ***Science of The Total Environment***, 2020, 720: 137569. (Q1, IF=10.753)

[5] **Liuyue He**, Sufen Wang[*], Congcong Peng, Qian Tan. Optimization of water consumption distribution based on crop suitability in the middle reaches of Heihe River. ***Sustainability***, 2018, 10(7): 2119. (Q4, IF=3.889)

[6] Juan Gong, **Liuyue He**[*], Sufen Wang. Agricultural drought disaster risk assessment based on fuzzy rough set model A case study of Hetao Irrigation District. ***Journal of Natural Disasters***. 2021, 30(2):147-158. (In Chinese)

[7] Yu Hou, Yi Liu, Xiaoyu Xu, Yunfei Fan, **Liuyue He**, Sufen Wang[*]. Improving food system sustainability: Grid-scale crop layout model considering resource-environment-economy-nutrition. ***Journal of Cleaner Production***, 2023, 403: 136881. (Q1, IF=11.072)

[8] Shimeng Ma, **Liuyue He**, Yu Fang, Xiuxia Liu, Yunfei Fan, Sufen Wang[*]. Intensive land management through policy intervention and spatiotemporal optimization can achieve carbon neutrality in advance. ***Journal of Cleaner Production***, 2022, 385: 135635. (Q1, IF=11.072)

[9] Yunfei Fan, **Liuyue He**, Yi Liu, Sufen Wang[*]. Spatiotemporally optimize water-nitrogen management of crop planting in response to carbon emissions mitigation. ***Journal of Cleaner Production***, 2022, 380: 134974. (Q1, IF=11.072)

[10] Yunfei Fan, **Liuyue He**, Yi Liu, Sufen Wang[*]. Optimal cropping patterns can be conducive to sustainable irrigation: Evidence from the drylands of Northwest China. ***Agricultural Water Management***, 2022, 274: 107977. (Q1, IF=6.611)

[11] Yunfei Fan, **Liuyue He**, Yi Liu, Sufen Wang[*]. Reallocating crop spatial pattern improves agricultural productivity and irrigation benefits without reducing yields. ***Environment, Development and Sustainability***, 2022: 1-22. (Q4, IF=4.080)

[12] Juan Gong, **Liuyue He**, Xiuxia Liu, Sufen Wang[*]. Optimizing the allocation of irrigation water for multiple crops based on the crop water allocation priority. ***Irrigation Science***, 2023,41: 49-68. (Q2，IF=3.519)

[13] Rongchao Shi, Jintao Wang, Ling Tong[*], Taisheng Du, Manoi Kumar Shukla, Xuelian Jiang, Donghao Li, Yonghui Qin, **Liuyue He**, Xiaorui Bai, Xiaoxu Guo. Optimizing planting density and irrigation depth of hybrid maize seed production under limited water availability. ***Agricultural Water Management***, 2022, 271: 107759. (Q1, IF=6.611)

[14] Yunfei Fan, **Liuyue He**, Shaozhong Kang, Sufen Wang[*], Yu Fang. A novel approach to dynamically optimize the spatio-temporal distribution of crop water consumption. ***Journal of Cleaner Production***, 2021,310:127439. (Q1, IF=11.072)

[15] Arman Ahmadi, Mohammad Emami, Andre Daccache[*], **Liuyue He**. Soil properties prediction for precision agriculture using visible and near-infrared spectroscopy: A systematic review and meta-analysis. ***Agronomy***, 2021,11(3):433. (Q3, IF=3.949）

[16] Jian Kang, Xin Zi, Sufen Wang[*], **Liuyue He**. Evaluation and optimization of agricultural water resources carrying capacity in Haihe River basin, China. ***Water***, 2019, 11(5):999. (Q4, IF=3.530)

[17] Rongchao Shi, Ling Tong[*], Taisheng Du, Yonghui Qin, **Liuyue He**, Xiaorui Bai. Simulation of hybrid maize seeds yield under different water regimes and planting densities based on modified AquaCrop–KR model. Transactions of The Chinese Society of Agricultural Engineering. 2022, 38(15):63-71. (EI, In Chinese)

[18] Rongchao Shi, Ling Tong, **Liuyue He**, Xuelian Jiang. Effect of planting density on water consumption of seed-maize and validation of a model. ***Journal of Iirrigation and Drainage***. 2017, 36(4):68-73. (In Chinese)

[19] Sufen Wang, Yunfei Fan, Jianxia Bao, **Liuyue He**. A method for optimizing spatial pattern of regional crop water consumption. (Chinese patent, ZL201910142416.X)

[20] Sufen Wang, Yu Hou, Yunfei Fan, **Liuyue He**, Shimeng Ma. An optimization method for regional crop planting layout considering dietary balance. (Chinese patent, CN202111383827.1)

AWARDS

- Awarded the Outstanding graduate of Beijing, Outstanding graduate of CAU in 2022
- Awarded the First/Second Prize Graduate Scholarship, Grand Prize of the 3rd Graduate Academic Forum of the

Department of Hydraulic Engineering from 2017 to 2020

- Awarded the Second Prize Graduate Scholarship of CAU and "Research Contribution Award" of College of Water Resources and Civil Engineering in 2015
- Awarded the CAU's Second Prize Scholarship, XIGENITE Second Prize Scholarship, and "Excellent league member" from 2011 to 2013

SOFTWARE SKILLS

ArcGIS, LINGO, Python, MATLAB, Crop model (DSSAT, AquaCrop), Origin, Autodesk CAD