LIUQIAN YU

Earth, Ocean and Atmospheric Sciences Thrust, The Hong Kong University of Science and Technology (Guangzhou), Guangzhou, China
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Google Scholar ResearchGate: https://www.researchgate.net/profile/Liuqian_Yu

ACADEMIC WORK EXPERIENCE

2021/07- **Assistant Professor**, Earth, Ocean and Atmospheric Sciences Thrust,
The Hong Kong University of Science and Technology (GZ), Guang Zhou, China

2021/07- **Affiliate Assistant Professor**, Department of Ocean Science,
The Hong Kong University of Science and Technology, Hong Kong, China

2020/07-2021/06 **Research Assistant Professor**, Department of Ocean Science,
The Hong Kong University of Science and Technology, Hong Kong, China

2019/02-2020/06 **Postdoctoral Fellow**, Department of Mathematics,
The Hong Kong University of Science and Technology, Hong Kong, China
Advisor: Dr. Jianping Gan

2015/08-2015/12 **Exchange Scholar**, Nansen Environmental and Remote Sensing Center, Norway
Advisor: Dr. Laurent Bertino

EDUCATION

2012 - 2018 **PhD** in Biological Oceanography, Dalhousie University, Canada
Thesis: "*Improved prediction of the effects of anthropogenic stressors in the Gulf of Mexico through regional-scale numerical modelling and data assimilation*"
Advisor: Dr. Katja Fennel

2007 - 2011 **BSc** in Environmental Science, Sun Yat-sen University, China
Thesis: "*Effects of biochar application on soil methane emission at different soil moisture levels*"
Advisor: Dr. Renduo Zhang

PEER-REVIEWED PUBLICATIONS

Google Scholar profile: https://scholar.google.com.hk/citations?user=AxZDDc0AAAAJ&hl=en
Publication Metrics: 1085 citations in total; *h-index*: 16; *i10-index*: 18 (accessed on 12 Nov 2023)

1. Dai, M., Zhao, Y., Chai, F., …, **Yu, L.**, et al. (2023) Persistent eutrophication and hypoxia in the coastal ocean. *Cambridge Prisms: Coastal Futures*, 1, e19, 1-28 https://doi.org/10.1017/cft.2023.7
2. Zhang, W., **Yu, L.**, Schmidt, S., Orfila, A., and Dias, J. M. (2023) Editorial: Regional coastal

deoxygenation and related ecological and biogeochemical modifications in a warming climate, *Frontiers in Marine Science*, 10, 1146877, https://doi.org/10.3389/fmars.2023.1146877

3. **Yu, L.,** Gan, J. (2022) Reversing impact of phytoplankton phosphorus limitation on coastal hypoxia due to interacting changes in surface production and shoreward bottom oxygen influx. *Water Research*, 212 (118094) https://doi.org/10.1016/j.watres.2022.118094
4. Fennel, K., Mattern, J. P., Doney, S. C., Bopp, L., Moore, A. M., Wang, B., & **Yu, L.** (2022) Ocean biogeochemical modelling. *Nature Reviews Methods Primers*, 2(1), 76. https://doi.org/10.1038/s43586-022-00154-2
5. Lu, Z., **Yu, L.** & Gan, J. (2022) External and Internal Forcings for Hypoxia Formation in an Urban Harbour in Hong Kong. *Frontiers in Marine Science*, 9, 858715. https://doi.org/10.3389/fmars.2022.858715
6. **Yu, L.,** Gan, J. (2021) Mitigation of Eutrophication and Hypoxia through Oyster Aquaculture: An Ecosystem Model Evaluation off the Pearl River Estuary. *Environmental Science & Technology*, 55, 8:5506-5514. https://doi.org/10.1021/acs.est.0c06616
7. Li, D., Gan, J., Hui, C., **Yu, L.,** Liu, Z., Lu, Z., Kao, S., and Dai, M. (2021) Spatiotemporal Development and Dissipation of Hypoxia Induced by Variable Wind-Driven Shelf Circulation off the Pearl River Estuary: Observational and Modeling Studies. *Journal of Geophysical Research: Oceans*, 126. https://doi.org/10.1029/2020JC016700
8. Wang, B., Fennel, K., and **Yu, L.** (2021) Can assimilation of satellite observations improve subsurface biological properties in a numerical model? A case study for the Gulf of Mexico. *Ocean Science*, 17, 1141-1156. https://doi.org/10.5194/os-17-1141-2021
9. **Yu, L.,** Gan, J., Dai, M., Hui, R. C., Lu, Z., Li, D. (2020) Modeling the role of riverine organic matter in hypoxia formation within the coastal transition zone off the Pearl River Estuary. *Limnology & Oceanography*, 66, 2021: 452-468. https://doi.org/10.1002/lno.11616
10. Li, D., Gan, J., Hui, R., Liu, Z., **Yu, L.,** Lu, Z., and Dai, M. (2020) Vortex and biogeochemical dynamics for the hypoxia formation within the coastal transition zone off the Pearl River Estuary. *Journal of Geophysical Research-Oceans*, 125(8): 1-16 https://doi.org/10.1029/2020JC016178
11. Wang, B., Fennel, K., **Yu, L.**, and Gordon, C. (2020) Assessing the value of biogeochemical Argo profiles versus ocean colour observations for biogeochemical model optimization in the Gulf of Mexico, *Biogeosciences*, 17: 4059-4074 https://doi.org/10.5194/bg-17-4059-2020
12. Hu, C., Chen, X., **Yu, L.**, Xu, D., Jiao, N. (2020) Elevated contribution of low nucleic acid prokaryotes and viral Lysis to the prokaryotic community along the nutrient gradient from an estuary to open ocean transect. *Frontiers in Microbiology,* 11:612053. https://doi.org/10.3389/fmicb.2020.612053
13. **Yu, L.,** Fennel, K., Wang, B., Laurent, A., Thompson, K. and Shay, L. (2019) Evaluation of nonidentical versus identical twin approaches for observation impact assessments: An ensemble-Kalman-filter-based ocean assimilation application for the Gulf of Mexico. *Ocean Science*, 15(6): 1801-1814 https://doi.org/10.5194/os-15-1801-2019
14. **Yu, L.,** Fennel, K., Bertino, L., Gharamti, M.E., and Thompson, K. (2018) Insights on multivariate updates of physical and biogeochemical ocean variables using an Ensemble Kalman Filter and an idealized model of upwelling. *Ocean Modelling*, 126: 13-28 https://doi.org/10.1016/j.ocemod.2018.04.005
15. Wang, B., Hu, J., Li, S., **Yu, L.**, and Huang, J. (2018) Impacts of anthropogenic inputs on the

hypoxia and oxygen dynamics in the Pearl River Estuary, *Biogeosciences*, 15: 6105-6125 https://doi.org/10.5194/bg-15-6105-2018

16. Zhang, H., Cheng, W., Chen, Y., **Yu, L.,** and Gong, W. (2018) Controls on the interannual variability of hypoxia in a subtropical embayment and its adjacent waters in the Guangdong coastal upwelling system, northern South China Sea. *Ocean Dynamics*, 68(8): 923-938 https://doi.org/10.1007/s10236-018-1168-2
17. Fennel, K., Laurent, A., Hetland, R., Justić, D., Ko, D. S., Lehrter, J., Murrell, M., Wang, L., **Yu, L.,** and Zhang, W. (2016) Effects of model physics on hypoxia simulations for the northern Gulf of Mexico: A model intercomparison. *Journal of Geophysical Research-Oceans*, 121(8): 5731-5750 https://doi.org/10.1002/2015JC011577
18. Yang, X., **Yu, L.,** Chen, Z., and Xu, M. (2016) Bioavailability of polycyclic aromatic hydrocarbons and their potential application in eco-risk assessment and source apportionment in urban river sediment. *Scientific Report,* 6, 23134 doi: 10.1038/srep23134
19. **Yu, L.,** Fennel, K. and Laurent, A. (2015) A modeling study of physical controls on hypoxia generation in the Northern Gulf of Mexico. *Journal of Geophysical Research-Oceans*, 120(7): 5019-5039 https://doi.org/10.1002/2014JC010634
20. **Yu, L.,** Fennel, K., Laurent, A., Murrell, M. C., and Lehrter, J. C. (2015) Numerical analysis of the primary processes controlling oxygen dynamics on the Louisiana shelf, *Biogeosciences*, 12(7): 2063-2076 https://doi.org/10.1071/SR14075
21. Ouyang L., Tang Q., **Yu, L.,** and Zhang, R. (2014) Effects of amendment of different biochars on soil enzyme activities related to carbon mineralization. *Soil Research*, 52(7): 706-716 https://doi.org/10.1071/SR14075
22. Ouyang L., **Yu, L.,** and Zhang, R. (2014) Effects of amendment of different biochars on soil carbon mineralization and sequestration. *Soil Research*, 52(1): 46-54 https://doi.org/10.1071/SR13186
23. **Yu, L.,** Tang, J., Zhang, R., Wu, Q., and Gong, M. (2013) Effects of biochar application on soil methane emission at different soil moisture levels. *Biology and Fertility of Soils*, 49(2): 119-128 https://doi.org/10.1007/s00374-012-0703-4
24. Ouyang, L., Wang, F., Tang, J., **Yu, L.,** and Zhang, R. (2013) Effects of biochar amendment on soil aggregates and hydraulic properties. *Journal of soil science and plant nutrition*, 13(4): 991-1002 http://dx.doi.org/10.4067/S0718-95162013005000078

RESEARCH GRANTS

Principal Investigator (PI):

National Natural Science Foundation of China (NSFC) Young Scientists Fund, 2023-2025, Budget: RMB300,000

Guangzhou-HKUST(GZ) Joint Funding Scheme, 2023-2025, Budget: RMB250,000

Center for Ocean Research in Hong Kong and Macau (CORE), Research Grant, 2022-2023, Budget: HK$400,000

POME Norwegian-Canadian Exchange Program, PhD Mobility Grant, 2015, Budget: 5-months studentship and travelling fund

Co-Principal Investigator (co-PI):

Center for Ocean Research in Hong Kong and Macau (CORE), Research Grant, 2023-2025, Budget: HK$1,000,000 (collaborate with PI Dr. Janping Gan, HKUST)

Co-Investigator (co-I):

Hong Kong Research Grants Council (RGC)'s Areas of Excellence (AoE) Scheme, 2024-2028, Budget: HK$87,147,000 (collaborate with PI Dr. Janping Gan and others, HKUST)

Hong Kong Research Grants Council (RGC)'s General Research Fund (GRF), 2024-2026, Budget: HK$877,079 (collaborate with PI Dr. Janping Gan, HKUST)

National Natural Science Foundation of China (NSFC) General Program, 2024-2027, Budget: RMB500,000 (collaborate with PI Dr. Haiyan Zhang, Tianjin University)

Center for Ocean Research in Hong Kong and Macau (CORE), Research Grant, 2023-2024, Budget: HK$300,000 (collaborate with PI Dr. Jianzhen Yu and co-I Dr. Xu Yu, HKUST)

TEACHING

UCUG1000-M04 Critical thinking and data literacy in Science (Fall 2023; co-teach with Xuning Zhang and Jun Wu)

EOAS5000 Introduction to Oceanography (Fall 2023; co-teach with Qing Li and Qixing Ji)

EOAS5003 Coupled Physical-Biogeochemical Dynamics in the Ocean (Spring 2023; co-teach with Qixing Ji)

EOAS5004 Earth System Modeling (Spring 2023; co-teach with Qing Li and Qichun Yang)

FUNH 5000 Introduction to Function Hub for Sustainable Future (Spring 2023; co-teach with 7 instructors from Function Hub)

EOAS6000B Global Carbon Cycle and Climate Change (Fall 2022; co-teach with Qixing Ji)

EOAS6000A Ocean Circulation, Carbon cycle, Ecosystems, and Changing Climate (Fall 2021; co-teach with Qing Li and Qixing Ji)

FUNH6800A Function Hub Seminar (Fall 2021; coordinate with other instructors)

Guest lectures in OCES5300 Chemical Oceanography, OCES4001 Ocean and Climate Change, and OCES3201 Biological Oceanography (HKUST)

TRAINING OF HIGHLY QUALIFIED PERSONNEL (HQP)

Advisor

Zhouxiao Liu	PhD student, since 2023/09
Zheng Chen	PhD student, since 2022/09
Jinling Deng	PhD student, since 2022/09
Zhuowei Xu	PhD student, since 2022/09
Ye Liu	PhD student, 2022/09~2023/10

Co-advisor

Chenzhe Li	PhD student, since 2023/09, co-advised with Yi Liu

Yan Zhang	PhD student, since 2023/09, co-advised with Yi Liu
Xuanjing Zheng	PhD student, since 2023/09, co-advised with Qixing Ji
Xinghao Jiang	PhD student, since 2023/09, co-advised with Qing Li
Haoyuan Yu	Mphil student, since 2023/03, co-advised with Qichun Yang
Rongxin Liu	PhD student, since 2022/09, co-advised with Qixing Ji
Qinghong Cui	PhD student, since 2022/09, co-advised with Jinshu Chi
Guangbo Li	PhD student, since 2021/09, co-advised with Qixing Ji

Member of Program Planning cum Thesis Supervision Committee (PPTSC)

Benjamin Fung	MPhil student, Internet of Things (IoF) Thrust, since 2022/04
Bo Huang	PhD student, Data Science and Analytics (DSA) Thrust, since 2022/04
Yulin Li	PhD student, Robotics Institute, since 2022/04
Ziwei Wu	PhD student, Computational Media and Arts (CMA) Thrust, since 2022/04
Zizhuo Xu	PhD student, Data Science and Analytics (DSA) Thrust, since 2022/04

Other advisory activities (excluding students directly advised or co-advised by me)

Ying Zhang	Examiner, 2023, PhD Qualifying Exam
Yuxuan Lin	Examiner, 2023, MPhil defense
Lixia Deng	Examiner, 2022, PhD Qualifying Exam

SERVICE TO THE UNIVERSITY

Academic advisor	Residential College for undergraduate students (since 2023/10)
Member	Advisory Committee of the Earth and Environmental Systems Research Facility (EESRF) (since 2023/06)
Chair	Curriculum Committee of the EOAS Thrust (since 2022/04)
Member	Postgraduate Committee of the EOAS Thrust (since 2021/08)
Member	Judge panel of HKUST(GZ)'s first Three Minute Thesis Competition (preliminary round) (2023/05)
Member	Interview Committee of the Head/Deputy Head of Division of STEM Education (2023/04)
Content provider	HKUST(GZ) Visitor Information Center Zone 4.2C3 *Diagnosing Our Oceans* (2022/02~2023/03)
Member	Selection/Interview Committee of the Red Bird MPhil Program (2021/10 - 2022/05)

OTHER ACADEMIC ACTIVITIES

Co-chair OceanPredict Marine Ecosystem Analysis and Prediction Task Team (MEAP-TT) (since 2023/07; co-chair with Dr. Stefano Ciavatta)

Member in scientific steering committees and working groups

Scientific Steering Committee of Advances in Marine Ecosystem Modelling Research (AMEMR) 2024 (since 2023/07)

OceanPredict Science Team (since 2023/07)
OceanPredict MEAP-TT (since 2020/10)

Convener or Co-chair of conference sessions

Ocean Science Meeting 2024 Session CC011 *Ocean observing system evaluation and design from the ocean and S2S monitoring and prediction perspective*
American Geophysical Union (AGU) Fall Meeting 2023 Session OS016 *Land-Ocean-Atmosphere Interactions in the Earth System*
The Sixth Xiamen Symposium on Marine Environmental Sciences (XMAS-VI) Session BGC-07 *Drivers and consequences of marine dissolved oxygen depletion: from estuaries to the open ocean*

Co-Editor

Frontiers in Marine Science Special Issue *Regional Coastal Deoxygenation and Related Ecological and Biogeochemical Modifications in a Warming Climate*

Manuscript reviewer (>30 reviews): Journal of Geophysical Research-Oceans, Journal of Geophysical Research-Biogeosciences, Biogeosciences, Ocean Modelling, Limnology and Oceanography, Progress in Oceanography, Estuarine, Coastal and Shelf Science, Environmental Research Letters, PLoS ONE, Frontiers in Marine Science, Frontiers of Earth Science, …

Proposal reviewer USA NSF grant proposal

AWARDS

2022	Top Cited Article 2021-2022 of Limnology and Oceanography
2017	Chinese Government Award for Outstanding Self Finance Students Abroad
2014-2018	Nova Scotia Graduate Scholarship, Canada
2009	National Scholarship from Ministry of Education of China