

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
- 2011/07-2011/11 **Research Assistant**, School of Environmental Science and Engineering,
Sun Yat-sen University, China Advisor: Dr. Renduo Zhang

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: 1031 citations in total; *h-index*: 15; *i10-index*: 18 (accessed on 20 Aug 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

Principle 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-Investigator (co-I):

Hong Kong Research Grants Council (RGC)'s Areas of Excellence (AoE) Scheme, 2024-2028, Budget: HK\$8,714,700 (collaborate with PI Dr. Janping Gan and others)

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)

TEACHING

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)

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

TRAINING OF HIGHLY QUALIFIED PERSONNEL (HQP)

Advisor

Zheng Chen PhD student, since 2022/09

Jinling Deng PhD student, since 2022/09

Ye Liu PhD student, since 2022/09

Zhuowei Xu PhD student, since 2022/09

Zhouxiao Liu Research Assistant, 2022/08 - 2023/08; PhD student, since 2023/09

Co-advisor

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)

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

SERVICE TO THE UNIVERSITY

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) (2023/07 - Present; 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)

Co-chair of conference sessions

American Geophysical Union (AGU) Fall Meeting 2023 Session OS016 *Land-Ocean-Atmosphere Interactions in the Earth System*
Ocean Science Meeting 2024 Session CC011 *Ocean observing system evaluation and design from the ocean and S2S monitoring and prediction perspective*
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 (26 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 (1 review)

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