

# Dr. Wenzhao LIANG

Email: [liangwz@ust.hk](mailto:liangwz@ust.hk) Mobile: +852 54446925  
Department of Ocean Sciences, HKUST  
CYT, Rm 5006  
The Hong Kong University of Science and Technology  
Clear Water Bay, Kowloon, Hong Kong



## Academic Experience

Postdoctoral Fellow, Environmental Organic Chemistry, HKUST (2022-now)

## Education

Ph.D., Hydrogeology and Biogeochemistry, The University of Hong Kong (2022)

M.S., Envi. Sci., SCSIO, University of Chinese Academy of Sciences (2016)

B.S., Envi. Sci., Department of Environmental Science and Engineering, Sun Yat-Sen University (2013)

## Project Experience

***Youth Fund of National Natural Science Foundation of China (42306044)***– Exploring the impact of reactive iron oxides on the preservation of organic matter in the coastal mangrove. CNY 300,000, 2024-2026, **PI**.

***HKUST Post-Doctoral Fellowship (PDF) Matching Fund*** – The Fate of Organic Matter in the Coastal System and its Impact on Coastal Hypoxia. HK\$ 64,800, 2023-2024, **PI**.

***Opening Fund Key Laboratory of Geomechanics and Geotechnical Engineering Safety, Institute of Rock and Soil Mechanics, Chinese Academy of Sciences*** – Study on the Evolution Law of Engineering Properties and Service Behavior of Marine Silt Cured by All Solid Waste Cementitious Materials. CNY 150,000, 2024-2026, **PI**.

***General Research Fund from Research Grants Council of the Hong Kong Special Administrative Region (16306623)***- Investigation of phytoplankton-derived humic-like dissolved organic matter in estuaries and coastal oceans”, HK\$ 877, 079, 2024-2026, **Co-Investigator**,

***Hong Kong Marine Conservation Enhancement Fund (MCEF22005)*** - Exploring Fluorescence Spectroscopic characterisation of algal organic matter and its implication on early warning of harmful algal blooms in the fish culture zones of Hong Kong, HK\$ 749,700, 2023.07-2025.06, **Co-PI**.

***Hong Kong Marine Ecology Enhancement Fund (MEEF2023008)*** - Assessing the ecological impacts of anthropogenic activities on the coastal wetlands in Hong Kong from the optical properties of sedimentary dissolved organic matter, HK\$718,500, 07/2023-06/2024, **Co-Investigator**.

***The Key Program of National Natural Science Foundation of China (42130702)*** - The province, discharge and evolution of the offshore groundwater system, and its biogeochemical implications in the Pearl River Estuary and the adjacent continental Shelf, CNY 2,910,000, 2022-2026, **Co-Investigator**.

***General Research Fund from Research Grants Council of the Hong Kong Special Administrative Region (17303519)*** - Microbial-mediated nutrient cycle in the beach aquifer and benthic sediments and its effect on the algal blooms in Tolo Harbour, HK\$ 740,000, 2020-2022, **Co-Investigator**.

***The General Program of National Natural Science Foundation of China (41877172)*** - The investigation of

carbon cycle and greenhouse gas (CO<sub>2</sub>, CH<sub>4</sub>) emission from aquifer-aquitard system in Pearl River Delta, CNY 610,000, 2019 -2022, **Co-Investigator.**

**The Key Program of National Natural Science Foundation of China** (41430968) - Marine phytoplankton size classes and related ecological factors respond to typhoons - based on remote sensed and in situ data, CNY 2,560,000, 2015-2019, **Co-Investigator.**

### **Journal Publications**

- Liang, W.**, Chen, X., Zhao, C., Li, L., & He, D. (2023). Seasonal changes of dissolved organic matter chemistry and its linkage with greenhouse gas emissions in saltmarsh surface water and porewater interactions. *Water Research*, 245, 120582.
- Liang, W.**, Liu, T., Wang, Y., Jiao, J. J., Gan, J., & He, D. (2023). Spatiotemporal-aware machine learning approaches for dissolved oxygen prediction in coastal waters. *Science of The Total Environment*, 167138.
- Liang, W.**, Liu, Y., Jiao, J. J., & Luo, X. (2020). The dynamics of dissolved inorganic nitrogen species mediated by fresh submarine groundwater discharge and their impact on phytoplankton community structure. *Science of The Total Environment*, 703, 134897.
- Liang, W.**, Tang D.L., Luo X. (2018). Phytoplankton size structure in the western South China Sea under the influence of a 'jet-eddy system'. *Journal of Marine Systems* 187: 82-95.
- Li, P., **Liang, W.**, Zhou, Y., Yi, Y., He, C., Shi, Q., & He, D. (2023). Hypoxia diversifies molecular composition of dissolved organic matter and enhances preservation of terrestrial organic carbon in the Yangtze River Estuary. *Science of The Total Environment*, 167661.
- Yu, S., Jiao, J. J., Luo, X., Li, H., Wang, X., Zhang, X., ... **Liang, W.** & Lu, M. (2023). Evolutionary history of the groundwater system in the Pearl River Delta (China) during the Holocene. *Geology*, 51(5), 481-485.
- Liu, Y., Jiao, J. J., **Liang, W.**, Santos, I. R., Kuang, X., & Robinson, C. E. (2021). Inorganic carbon and alkalinity biogeochemistry and fluxes in an intertidal beach aquifer: Implications for ocean acidification. *Journal of Hydrology*, 595, 126036.
- Zhang, X., Li, H., Jiao, J. J., Luo, X., Zuo, J., Lu, M., Liu, Y., **Liang, W.**, & Kuang, X. (2021). Control factors on nutrient cycling in the lake water and groundwater of the Badain Jaran Desert, China. *Journal of Hydrology*, 598, 126408.
- Liu, Y., Tang, D., Tang, S., Morozov, E., **Liang, W.**, & Sui, Y. (2020). A case study of Chlorophyll a response to tropical cyclone Wind Pump considering Kuroshio invasion and air-sea heat exchange. *Science of the Total Environment*, 741, 140290.
- Liu, Y., Jiao, J. J., Mao, R., Luo, X., **Liang, W.**, & Robinson, C. E. (2019). Spatial characteristics reveal the reactive transport of radium isotopes (<sup>224</sup>Ra, <sup>223</sup>Ra, and <sup>228</sup>Ra) in an intertidal aquifer. *Water Resources Research*, 55(12), 10282-10302.
- Liu, Y., C. Not, J. J. Jiao, **Liang, W.**, and M. Lu. (2019). Tidal induced dynamics and geochemical reactions of trace metals (Fe, Mn, and Sr) in the salinity transition zone of an intertidal aquifer. *Science of the Total Environment*.
- Luo, X., J. J. Jiao, Y. Liu, X. Zhang, **Liang W.**, and D. Tang. (2018). Evaluation of Water Residence Time, Submarine Groundwater Discharge, and Maximum New Production Supported by Groundwater Borne Nutrients in a Coastal Upwelling Shelf System. *Journal of Geophysical Research: Oceans*.
- Liu, Y., **Liang W.**, Jiao J.J. (2018). "Seasonality of Nutrient Flux and Biogeochemistry in an Intertidal Aquifer." *Journal of Geophysical Research: Oceans*.
- Liu, Y., Jiao J.J., **Liang W.** (2018). "Using Tidal Fluctuation-Induced Dynamics of Radium Isotopes (<sup>224</sup>Ra, <sup>223</sup>Ra, and <sup>228</sup>Ra) to Trace the Hydrodynamics and Geochemical Reactions in a Coastal Groundwater Mixing Zone." *Water Resources Research* 54(4): 2909-2930.

Liu, Y., Jiao J.J., **Liang W.** (2017). "Tidal Pumping-Induced Nutrients Dynamics and Biogeochemical Implications in an Intertidal Aquifer." *Journal of Geophysical Research: Biogeosciences* 122(12): 3322-3342.

Liu, Y., Jiao J.J., **Liang W.** (2017). "Hydrogeochemical characteristics in coastal groundwater mixing zone." *Applied Geochemistry* 85: 49-60.

### **Presentation in conferences**

**Liang, W.**, Chen X, Zhao C, Li L, He D. (2023, December). Seasonal changes of dissolved organic matter chemistry and its linkage with greenhouse gas emissions in saltmarsh surface water and porewater interactions. In *AGU Fall Meeting Abstracts* (Vol. 2023, pp. B23K-2066).

**Liang, W.**, Jiao, J. J. J., Liu, Y., Luo, X., Lu, M., Yu, S., & Song, Y. R. (2021, December). Impacts of super typhoon Mangkhut on the biogeochemical cycle in a mangrove beach aquifer. In *American Geophysical Union (AGU) Fall Meeting*, 2021. American Geophysical Union.

**Liang, W.**, Jiao, J. J., Liu, Y., & Luo, X. (2019, December). Isotope evidence for seasonal dynamics of dissolved nitrogen in Tolo harbour, Hong Kong. In *AGU Fall Meeting Abstracts* (Vol. 2019, pp. H51A-06).

**Liang, W.**, Jiao, J. J., Liu, Y., & Luo, X. (2018, December). Dissolved inorganic nitrogen species change induced by sub-marine groundwater discharge and its impact on phytoplankton community structure in Tolo harbour, Hong Kong. In *AGU Fall Meeting Abstracts* (Vol. 2018, pp. H23K-2066).

### **Professional Activities**

Reviewer for the following journals: Water Research, Science of the total environment, Journal of Geophysical Research: Oceans, Journal of Geophysical Research: Biogeosciences, Scientific Reports, Marine Pollution Bulletin, Applied Geochemistry, Environmental Science and Pollution Research