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Education

2019	Ph.D.	Louisiana State University Baton Rouge, LA, United States	Physical Oceanography Minor: Geography
2013	M.S.	Nanjing University of Information Science and Technology Nanjing, Jiangsu, China	Meteorology
2010	B.S.	Nanjing University of Information Science and Technology Nanjing, Jiangsu, China	Marine Science

Professional experience & services

08/2023 to present Assistant Professor,
Florida International University, Miami, FL, United States

03/2022 to 08/2023 Post-doctoral Research Associate,
Oak Ridge National Laboratory, Oak Ridge, TN, United States

10/2019 to 01/2022 Post-doctoral Research Associate,
Virginia Institute of Marine Science,
College of William and Mary, Gloucester Point, VA, United States

07/2013 to 07/2014 Assistant engineer,
Meteorological Institute of Jilin Province, Changchun, China

Funding History

Current

2022 to present, funded by Department of Energy, Coastal Observations, Mechanisms, and Predictions Across Systems and Scales (COMPASS), Field, Measurements, and Experiments (FME) Pilot Study, co-PI, Peter Thornton & Teri O'Meara, contributing to proposal writing for renewal, $ ~17.5 M (~1 M to ORNL)
My role: post-doc researcher funded by this project.

Past

10/2/2020 to 1/31/2021, funded by One Concern, Inc., Supporting high-resolution simulations of compound flooding hazard for Japan, PI, Joseph Zhang, $225,000.00
My role: post-doc researcher funded by this project.
9/21/2020 to 9/20/2021, funded by NOAA, NOPP-ONR, 3D coastal compound flooding prediction system, PI, Joseph Zhang, $249,999.00
My role: post-doc researcher funded by this project.
10/21/2019-9/30/2021, funded by NOAA and UCAR, Implementing SCHISM model as part of NOAA integrated water modeling projects, PI, Joseph Zhang, $239,996.000
My role: post-doc researcher funded by this project.

Publications

2023

[20] Liu, B., E.J. D'Sa, F. Messina, M. M. Baustian, K. Maiti, V.H. Rivera-Monroy, **W. Huang**, and I. Georgiou, Dissolved Organic Carbon Dynamics and fluxes in Mississippi-Atchafalaya deltaic system impacted by an extreme flood event and hurricanes: a multi-satellite approach using Sentinel-2/3 and Landsat-8/9 Data. *Frontiers in Marine Science*, accepted.

[19] **Huang, W.,** Y.J. Zhang, Z. Liu, H.C. Yu, Y. Liu, S. Lamont, Y. Zhang, F. Hirpa, T. Li, B. Baker, W. Zhang, S. Patel, and N. Mori. Simulation of Compound flooding in Japan using a nation-wide model. *Natural Hazards*. https://doi.org/10.1007/s11069-023-05962-7

2022

[18] **Huang, W.**, Y.J. Zhang, F. Ye, Z. Wang, S. Moghimi, E. Myers, and H.C. Yu, 2022, Tidal Simulation Revisited, *Ocean Dynamics*, 1-19. https://doi.org/10.1007/s10236-022-01498-9

[17] Zhang, Q., Li, C., **Huang, W.,** Lin, J., Hiatt, M., Rivera-Monroy, V.H., 2022, Water Circulation Driven by Cold Fronts in the Wax Lake Delta (Louisiana, USA). *J. Mar. Sci.* Eng 10(3), 415. https://doi.org/10.3390/jmse10030415

2021

[16] **Huang, W**., Ye, F., Zhang, Y., Park, K., Du, J., Moghimi, S., Myers, E., Pe'eri, S., Calzada, J.R., Yu, H.C., Nunez, K., and Liu, Z. 2021, Compounding factors for extreme flooding around Galveston Bay during Hurricane Harvey, *Ocean Modelling* 158, 101735. https://doi.org/10.1016/j.ocemod.2020.101735

[15] Ye, F., **Huang, W.,** Zhang, Y. J., Moghimi, S., Myers, E., Pe'eri, S., and Yu, H.-C.: A cross-scale study for compound flooding processes during Hurricane Florence, *Nat. Hazards Earth Syst. Sci.* 21(6), 1703-1719. https://doi.org/10.5194/nhess-21-1703-2021

[14] M. Jiao, **W. Huang**, L. Chen, F. Sun, and Z. Yu, 2021, Causes of the extreme drought event in Liaoning Province, China in July-August 2014, *Meteorology and Atmospheric Physics* 133(4), 1355-1365. https://doi.org/10.1007/s00703-021-00814-0

[13] Li, M., C. Li, L. Xie, W. Huang, Q. Zheng, K. Tan, Y. Hong, 2021, Astronomical tide and storm surge signals observed in an inland maar lake near the coast, *Journal of Marine Science and Engineering* 9(5), 485. https://doi.org/10.3390/jmse9050485

2020

[12] **Huang, W**., C. Li, J. White, S. Bargu, B. Milan, and S. Bentley, 2020. Numerical Experiments on variation of freshwater plume from Mississippi River diversion in Lake Pontchartrain estuary, *Journal of Geophysical Research: Oceans*,125(2), C2019JC015282, https://doi.org/10.1029/2019JC015282.

[11] **Huang, W.**, and C. Li, 2020. Contrasting Hydrodynamic Responses to Atmospheric Systems with Different Scales: Impact of Cold Fronts vs. that of a Hurricane. *Journal of Marine Systems and Engineering* 8(12), 979. https://doi.org/10.3390/jmse8120979

[10] Li, C., **W. Huang**, R. Wu, 2020. Weather induced quasi-periodic motions in estuaries and bays: meteorological tide. *China Ocean Engineering*, 34(3), 299-313. https://doi.org/10.1007/s13344-020-0028-2

[9] Wang, J., C. Li, F. Xu, and **W. Huang**, 2020. Severe weather induced exchange flows of an estuary using horizontal ADCPs, a vessel-based ADCP, and regression analysis. *Journal of Marine Science and Engineer*, 8(2), 113. https://doi.org/10.3390/jmse8020113

2019

[8] **Huang, W**. and C. Li, 2019, Spatial variation of cold front wind-driven circulation and quasi-steady state balance in Lake Pontchartrain Estuary. *Estuarine Coastal and Shelf Science*, 224, 154-170. https://doi.org/10.1016/j.ecss.2019.04.031

[7] Li, C., **W. Huang**, and B. Milan, 2019, Atmospheric cold front induced exchange flows through a microtidal multi-inlet bay: analysis using multiple horizontal ADCPs and FVCOM simulations, *Journal of Atmospheric and Oceanic Technology*, 36(3), 443-472. https://doi.org/10.1175/JTECH-D-18-0143.1

[6] Li C., **W. Huang**, B. Guo, R. Wu and J. Zhang, "Tidal currents and eddies around islands - ship-based measurements in Zhoushan Archipelago on the East China continental shelf," *OCEANS 2019 MTS/IEEE SEATTLE*, Seattle, WA, USA, 2019, pp. 1-5, doi:10.23919/OCEANS40490.2019.8962641.

[5] Li, C., K.M. Boswell, N. Chaichitehrani, **W. Huang**, and R. Wu, 2019, Weather Induced Subtidal Flows through multiple inlets of an Arctic micro-tidal Lagoon, *Acta Oceanologica Sinica*, 28(3). 1-16. https://doi.org/10.1007/s13131-019-1361-2.

2018

[4] Li, C., W. Huang, C. Chen, and H. Lin, 2018, Flow regimes and adjustment to wind-driven motions in Lake Pontchartrain Estuary: a modeling experiment using FVCOM, *Journal of Geophysical Research: Oceans* 123, 8460-8488. https://doi.org/10.1029/2018JC013985

[3] Li, C., E. Weeks, B. Milan, **W. Huang**, and R. Wu, 2018, Weather Induced Transport through a Tidal Channel Calibrated by an Unmanned Boat, *Journal of Atmospheric and Oceanic Technology* 35(2): 261-279. DOI: https://doi.org/10.1175/JTECH-D-17-0130.1

2017

[2] **Huang, W**. and C. Li, 2017, Cold Front Driven Flows Through Multiple Inlets of Lake Pontchartrain Estuary. *Journal of Geophysical Research: Oceans*, 122(11), 8627-8645. https://doi.org/10.1002/2017JC012977

2015

[1] Wang, J., **W. Huang**, Q. Wang, C. Miao, Z. Zhang, and L. Xu, 2015, Construction and application of extreme rainstorm probability prediction based on Radar echo base data, *Plateau Meteorology* 34(2), 575-585.

Technical Report

- Li C, Milan B, **Huang W**, Luo Y. A real-time observing station off Timbalier Bay, Louisiana. 2020. New Orleans (LA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2020-015. Cooperative Agreement No.: M15AC00015. 74 p.
- Li, Chunyan; Luo, Peter; Milan, Brian; and Huang, Wei, "A New Real-Time Ocean Observing Station on Ship Shoal on Louisiana Shelf" (2019). Ocean Waves Workshop. 2. https://scholarworks.uno.edu/oceanwaves/2019/Session4/2

Presentation at professional meetings

[18] **W. Huang**, T. O'Meara, B.N. Sulman, S. LaFond-Hudson, D.M. Ricciuto, and P.E. Thornton. Response of wetland ecosystems to increasing frequency of atmospheric fronts. 2022 AGU Fall Meeting.

[17] Li, C., **W. Huang**, A. Sheremet, R.V. Rohli, B. Milan, and Y. Luo. 2022, A study on the impact on coastal oceans in the Gulf of Mexico from recent storms in view of the variability of the last few decades. 102nd American Meteorological Society Annual Meeting.

[16] Liu, Z., Y. Zhang, **W. Huang**, Y. Liu, S. Lamont, et al., Simulating compound flooding in Japan with a cloud-based nation-wide modeling system, 2021 AGU Fall Meeting.

[15] Zhang, Y., **W. Huang**, F. Ye, S. Moghimi, E. Myers, K. Park, J. Calzada, and J. Du, 2021, 3D Model Results Reveal Compounding Factors in Hurricane Harvey, 101st American Meteorological Society Annual Meeting.

[14] **Huang, W.**, F. Ye, Y. Zhang, H. Yu, K. Nunez, S. Moghimi, and E. Myers, Coupled hydrological-hydrodynamic simulation for compound flooding event during Hurricane Harvey, AGU Fall Meeting, Dec., 2020.

[13] **Huang, W.**, Y. Zhang, F. Ye, H. Yu, S. Moghimi, and E.P. Myers, Coupled hydrological-hydrodynamic large-scale simulation, Ocean Science Meeting, Feb., 2020, San Diego, CA., Oral.

[12] **Huang, W.**, C. Li, and M. Hiatt, Numerical experiments on storm surge and circulation in Wax Lake Delta, Coastal and Estuarine Research Federation, Nov., 2019, Mobile, AB., Oral.

[11] Li, C., **W. Huang**, C. Chen, and H. Lin, Adjustment of wind-driven motion and storm surge in a semi-enclosed bay, Coastal and Estuarine Research Federation, Nov., 2019, Mobile, AB., Oral.

[10] Li, C., **W. Huang**, B. Milan, M.D. Miner, A. Sheremet, I.Y. Georgiou, K. Xu, K. Maiti, J. Wang, and M. Li, Impact of Hurricane Barry (2019) on the inner shelf circulation and exchange flow of Barataria Bay. Ocean Science Meeting, Feb., 2020, San Diego, CA., Poster.

[9] **Huang, W**., C. Li, and C. Chen, Numerical experiment of weather impact on freshwater plume from Bonnet Carré Spillway diversion, Feb., Ocean Science Meeting, Feb., 2018, Portland, OR., Oral.

[8] Li, C., **W. Huang**, and C. Chen, Examination of local and remote wind effects on circulations in coastal bays/estuaries under strong winds, Ocean Science Meeting, Feb., 2018, Portland, OR., Oral.

[7] Li, C., **W. Huang**, H.H. Roberts, M.R. Hiatt, A. Sheremet, V.I. Shrira, and C. Chen, Storm surge and circulation in Wax Lake Delta – numerical experiments for winter storms, AGU fall meeting, Dec., 2018, Washington D.C., Poster.

[6] **Huang, W**., and C. Li, Cold front driven water transport between Lake Pontchartrain through multiple inlets, AGU fall meeting, Dec., 2017, New Orleans.

[5] Li, C., B. Gibson, **W. Huang**, Y. Luo, and B. Milan, Summary: Analysis and synthesis of WAVCIS data for characteristics of currents on Louisiana coast, AGU fall meeting, Dec., 2017, New Orleans, LA., Oral and Poster.

[4] **Huang, W**., and C. Li, Hydrodynamic responses of Lake Pontchartrain to winter cold fronts, Coastal and Estuarine Research Federation, Nov., 2017, Providence, RI.

[3] Li, C., **W. Huang**, E. Weeks, and Y. Luo, Impact of Tropical Storm Lee (2011) on transport through tidal channels and inner shelf of Louisiana and calibration of transport using unmanned boat. Coastal and Estuarine Research Federation, Nov., 2017, Providence, RI., Oral presentation.

[2] **Huang, W**., and C. Li, Comparison of storm surges in eastern and western Louisiana lake estuaries, Ocean Science Meeting, Feb., 2016, New Orleans, Louisiana.

[1] **Huang, W**., and C. Li, Exchange of water of Lake Pontchartrain with coastal ocean through multiple inlets forced by atmospheric cold fronts, Asia Oceania Geosciences Society 13th Annual Meeting, Aug., 2016, Beijing, China.

Teaching Experience

- Introduction to Oceanography, Teaching Assistant, Louisiana State University (Spring, 2017, class size 70)
- Giving lectures on mesh grid generation for numerical modeling class (Fall 2021, class size 8)

Mentorship & Workshop

- Undergraduate student, graduation thesis, College of William & Mary
- Lecturer, NOAA SCHISM Workshop and Boot Camp
  Mesh generation for compound flooding study

Professional Service

- Reviewer board of *Journal of Marine Science and Engineering*
- Review Editor of *Frontiers in Marine Science*
- Reviewer, *Journal of Physical Oceanography*

- Reviewer, *Waters*
- Reviewer, *Estuarine, Coastal and Shelf Science*
- Reviewer, *Journal of Hydroinformatics*
- Reviewer, *Progress in Earth and Planetary Science*
- Reviewer, *International Journal of Environmental Research and Public Health*
- Reviewer, *Open Journal of Fluid Dynamics*

SKILLS

- Proficient in programming with Fortran, Python, MATLAB, C/C++, bash script, pearl, and NCL under Linux environment
- Visualizing/graphing using NCL, Tecplot, matlab, and Python
- Using Github to collaborate with project members. (https://github.com/huang96169)
- Processing and visualizing atmospheric/climatological reanalysis products in netcdf and grb2 formats.
- Processing and analyzing in-situ ocean observations measured by ADCP (Acoustic Doppler Current Profiler), CTD, and water pressure HOBOs data
- Using ArcGIS and QGIS to process large bathymetry/topography dataset and lidar images from regional to global scale.
- Experience in using Weather Research and Forecasting model (WRF) to simulate heavy rainfall events and daily weather forecast.
- Conducting numerical modeling, simulating coastal processes using FVCOM and SCHISM ocean models on HPC systems.
- Generating/designing unstructured grid for oceanic modeling by FVCOM and SCHISM using SMS and ACE/gredit
- Developing coastal hydrological exchange between different plant species of wetland/saltmarshes for Land Model of the Energy Exascale Earth System Model (ELM) on HPC systems.

Field and Lab Experience

- Deploying pressure sensors to collect water pressure and air pressure data using HOBO sensors
- Collecting salinity/temperature data using CTD and ADCP in coastal oceans
- Testing photosynthesis rate and water content for plants using Li-COR and Pressure Chamber

Awards and Honors

- Excellent Student Award academic years 2006-2007, 2007-2008, 2008-2009, 2009-2010
- Outstanding Student Leader Award academic years 2007-2008, 2008-2009, 2009-2010
- Honor of Outstanding Graduate 2010

Activities

- Intern in Dunhua Bureau of Meteorology, Jilin, China. Engaged in the work of forecasting weather for the local area, 2009.
- Intern in Liuhe Bureau of Meteorology, Jiangsu, China. Engaged in the work of weather forecasting for the local area, 2009.
- Participated in the 908 National Project “Investigation and Research of Wind Energy of Jiangsu and Shanghai Coast” (908-01-BC21), 2011
- Participated in project of “The sea level variation and evolution trend forecast of the Jiangsu coast”, 2010-2012
- Participated in “Radar reflectivity research of the open laboratory of Nanjing Weather Radar project”, 2010-2012
- Data processing for the project of “Heat wave forecasting and early warning system”

(TC09EL62)of the Meteorological Observatory in NUIST, 2011-2012

- Joined in the project of "Strong Convection Nowcasting and Warning system of Guangzhou Baiyun Airport", 2011
- Annual Conferences of Atmospheric Physics and Atmospheric Environment Key Laboratory China Meteorological Administration in NUIST in 2011 and 2012
- Gave an oral presentation in the Fengyun Forum of NUSIT, 2013
- Conducted real-time weather forecasting for WAVCIS, CSI, LSU, 2016-2019 https://www.wavcis.lsu.edu/gom_wrf.html