Linlin Cui, Ph.D

Virginia Institute of Marine Science | College of William & Mary
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Research Interests

Numerical Modeling
Dynamics of coastal and estuarine circulation
Estuarine stratification and turbulence mixing
Bio-physical interaction and ecosystem modeling
Biogeochemical processes in estuaries and shelves
Sediment transport modeling

Education

Ph.D. in *Physical Oceanography*, Louisiana State University, 2018
Thesis: Tidal-, Wind-, and Buoyancy-Driven Dynamics in Barataria Estuary and Its Impact on Estuarine-Shelf Exchange Processes

M.S. in *Computer Science,* Louisiana State University, 2018

M.S. in *Fishery Resources*, Shanghai Ocean University, 2013
Thesis: Numerical Simulation of Impact of Air-Sea Interaction on Cyclone over the East China Sea

B.S. in *Marine Science*, Nanjing University of Information Science and Technology, 2010
Thesis: Simulation of Impact of Thermohaline Circulation on the East Asian Monsoons

Professional Experience

02/2019-present	**Postdoctoral Research Associate**
	Virginia Institute of Marine Science (VIMS), Gloucester Point, VA

- Simulation of oil-microbial interactions in the northern Gulf of Mexico
- Sediment geochemical control on ocean acidification and carbon budget in the northern Gulf of Mexico

08/2013-12/2018	**Research Assistant**
	Louisiana State University, Baton Rouge, LA

- Created and configured a hydrodynamic model covering the Barataria Estuary and Texas-Louisiana shelf
- Studied the impact of river diversions on estuary salinity
- Investigated the lateral circulation in a tidal inlet
- Examined dynamics of river plumes in inner shelf of Louisiana shelf

09/2010-06/2013	**Research Assistant**
	Shanghai Ocean University, Shanghai, China

- Configured the Eastern China Sea Weather Research and Forecasting Model (WRFV3.2)
- Implemented COARE3.0 algorithm into WRF to improve heat fluxes
- Mentored undergraduate thesis

Honors/Awards

2019	Committee on Sustainability Professional Development Award, William & Mary
2019	Student/Early Career Travel Award, Coastal and Estuarine Research Federation (CERF)
2017-2018	Economic Development Assistantship, Louisiana State University

2016	Graduate School Dean's Travel Award, Louisiana State University
2011	First-class scholarship, Shanghai Ocean University
2010	Outstanding graduate student, Nanjing University of Information Science and Technology
2007-2009	National Encouragement Scholarship, Nanjing University of Information Science and Technology
2007	First-class scholarship, Nanjing University of Information Science and Technology
2007-2010	Merit student, Nanjing University of Information Science and Technology
2008-2010	Excellence student leader, Nanjing University of Information Science and Technology

Publications

Cui, L., H. Huang, and D. Justic. Impact of River Diversions on Salinity Gradient and Residence Time in the Barataria Estuary, LA. (In preparation)

Cui, L., and H. Huang. Tidal and Subtidal Induced Estuarine-Shelf Exchange through a Tidal Inlet: Implication for larval recruitment. (In preparation)

Huang, H., **L. Cui**, D. Justic, K. Rose, and L. Di. Residual Circulation Dynamics in the Breton Sound Estuary and Breton-Chandeleur Sound: With Implication to the Effect of River Diversion on Oil Slick Movement. (In revision)

Sorourian, S, H. Huang, **L. Cui**, D. Justic, and G. Mariotti. Unstructured grid spectral wave modeling during spring-summer time in a shallow estuary: the Barataria Basin. (submitted)

Cui, L., H. Huang, C. Li, and D. Justic. 2018. Lateral Circulation in a Partially Stratified Tidal Inlet. *J. Mar. Sci. Eng.*, 6, 159.

Hu, S., **Cui, L.**, Liu, H., and Zhu, M. 2012. Sensitivity of Air-Sea Flux to Microphysical Schemes and Planetary Boundary Layer Parameterizations in WRF during the Cyclone Passage. Journal of Shanghai Ocean University.

Cui, L., and Hu, S. 2012. Analysis on Difference of Sea Surface Wind Field between WRF and QuickSCAT over the East China Sea of 2008. Marine Forecasts.

Presentations/Conferences

Cui, L., C.K. Harris, K. Maiti, and W.J. Cai. Impact of Sediment Resuspension on Near Bed Dissolved Inorganic Carbon and Acidification in the northern Gulf of Mexico. Oral presentation at the 2019 Biennial Coastal and Estuarine Research Federation (CERF) Conference. Mobile, AL. November, 2019.

Cui, L., C.K. Harris, and D.R. Tarpley. Estimating the Impact of Oil on Flocculation Processes with a New Parameterized Sediment Model. Poster presented at the 2019 Biennial Coastal and Estuarine Research Federation (CERF) Conference. Mobile, AL. November, 2019.

Cui, L., C.K. Harris, and D.R. Tarpley. Estimating the Impact of Oil on Flocculation Processes with a New Parameterized Sediment Model. Poster presented at 2019 Gordon Research Conference on Coastal Research Dynamics. Manchester, NH. June, 2019.

Cui, L., C.K. Harris, and D.R. Tarpley. Estimating the Impact of Oil on Flocculation Processes with a New Parameterized Sediment Model. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) 2019 Annual Meeting. Boulder, CO. May, 2019.

Huang, H., **L. Cui**, and D. Justic. A modeling Study of Tidal- and Wind-Driven Estuary-Shelf Exchange through a Narrow Tidal Inlet: the Barataria Pass, Louisiana. Poster presented at the 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February, 2019.

Cui, L., guest lecture. Virginia Institute of Marine Science, Gloucester Point, VA. November, 2018.

Cui, L., H. Huang, C. Li, and D. Justic. Investigating Controlling Factors of Estuarine Stratification in a Tidal Inlet. Oral presentation at the 15th Estuarine and Coastal Modeling Conference, Seattle, WA. June, 2018.

Huang, H., **L. Cui**, and D. Justic. Assessing the Effects of River Diversions on Estuarine Dynamics and Oil Transport in the Barataria Bay. 2017 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February, 2017.

Huang, H., **L. Cui, S.** Sorourian, and D. Justic. Assessing the Effects of River Diversions on Salinity Gradient, Residence Time, and Sediment Transport in the Barataria Bay. Presented at the 2017 Estuarine Coastal Sciences Association Conference. Shanghai, China. October, 2017.

Cui, L. Graduate Student Symposium, Ocean Springs, MS. March, 2016.

Cui L., and H. Huang. Impact of Mississippi River Diversions on Salinity Gradients and Estuarine Residence Time in Coastal Louisiana: A Numerical Modeling Study. Oral presentation at the 2016 State of the Coast. New Orleans, LA. June, 2016.

Cui L., and H. Huang. Impact of Mississippi River Diversions on Salinity Gradients and Estuarine Residence Time in Coastal Louisiana: A Numerical Modeling Study. 14th Estuarine and Coastal Modeling Conference, Kingston, RI. June, 2016.

Huang, H., **L. Cui**, S. Sorourian, and D. Justic. A Coupled Ocean-Wave Model for the Barataria Bay, Louisiana. Poster presented at the 2016 Gulf of Mexico Oil Spill and Ecosystem Science Conference. Tampa, FL. February, 2016.

Cui, L., and H. Huang. Hurricane IKE (2008) Simulation Experiment Using WRF. Poster presented at the 2014 State of the Coast. New Orleans, LA. March, 2014.

Professional Development

The Coupled-Ocean-Atmosphere-Waves-Sediment-Transport (COAWST) Workshop. Raleigh, NC. Feb. 2019.
The 16th WRF Users' Workshop, 06/2015. Boulder, CO. June, 2015.
Annual LONI Parallel Programming Workshop. Louisiana State University, Baton Rouge, LA. June, 2014.
NVIDIA GPU Programming Workshop. Louisiana State University, Baton Rouge, LA. June, 2014.

Students Mentored

Undergraduate mentoring
Summer 2019, Mentor to Jacob Wacht (co-advised with Dr. Courtney Harris), from College of William and Mary, in the College of William and Mary SMS/VIMS Summer Internship Program.

Journal Article Reviews

2019: *Water*

Outreach

2019 Ocean Science Day at Virginia Institute of Marine Science

Professional Affiliations

American Geophysical Union
The Oceanography Society
Coastal and Estuarine Research Federation
Community Surface Dynamics Modeling System

Skills

- Numerical Models: FVCOM, ROMS, WRF
- Languages: Python3, Fortran90, NCL, Shell scripting, Java, MySQL
- Software and Tools: Open MPI parallel programming, R, SAS, Matlab, LaTeX