

# Zhi Li

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## Contact Information

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## Research Interests

Numerical model development, Multiphase flow in porous media, Environmental fluid mechanics, Hydrology/hydraulics, High performance computing

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## Academic Experience

**Lawrence Berkeley National Lab**, Berkeley, CA, USA

*Postdoctoral Scholar*  
Projects:

**Aug. 2019 -**

- The Hydraulic Fracturing Test Site (HFTS) project: A new framework for microscopic to reservoir-scale simulation of hydraulic fracturing and production.
- Role of Zhi Li: Simulating coupled flow-geomechanics processes during oil/gas/hydrate production with a focus on explicitly capturing multiphase flow and transport in the fracture network.

**University of Texas at Austin**, Austin, TX, USA

*Graduate Research Assistant*  
Projects:

**Sept. 2014 - May. 2019**

- Hydrodynamic modeling of salinity transport in the Nueces River Delta (2014-2015)
- Landscape analysis and hydrodynamic model development for Trinity River Delta (2016-2017)
- Building the Trinity River Delta Hydrodynamic Model (2018-2019)

**University of Michigan at Ann Arbor**, Ann Arbor, MI, USA

*Teaching Assistant*

**Sept. 2012 - May. 2013**

Teach lab and review sessions for the following classes:

- CEE 312 Structural Analysis, Fall 2012
- CEE 303 Computational Method, Winter 2013

*Undergraduate Research Assistant*

**May - Dec. 2012**

Simulate vibration of tensegrity structures under various loads. Investigate their potential use as ocean energy harvesters.

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## Education

**University of Texas at Austin**, Austin, TX, USA

Ph.D., Civil Engineering, May, 2019

- Dissertation Topic: Representing subgrid scale topographical effects on coarse grid hydrodynamic and transport model for shallow coastal marshes
- Supervisor: Dr. Ben R. Hodges

**University of California at Berkeley**, Berkeley, CA, USA

M.S., Civil and Environmental Engineering, May, 2014

**Shanghai Jiao Tong University**, Shanghai, China

B.S., Mechanical Engineering, August, 2013

**University of Michigan at Ann Arbor**, Ann Arbor, MI, USA

B.S., Civil and Environmental Engineering, May, 2013

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**Journal Papers**

[3] Li, Z. and Hodges, B.R., 20XX, On modeling subgrid-scale macro-structures in narrow twisted channels, *under review*.

[2] Li, Z. and Hodges, B.R., 2019, Modeling subgrid-scale topographic effects on shallow marsh hydrodynamics and salinity transport, *Advances in Water Resources*, (129)1-15, <https://doi.org/10.1016/j.advwatres.2019.05.004>

[1] Li, Z. and Hodges, B.R., 2018, Model instability and channel connectivity for 2D coastal marsh simulations, *Environ Fluid Mech*, <https://doi.org/10.1007/s10652-018-9623-7>

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**Conference Presentations**

[6] Li, Z. and Hodges, B.R., 2018. Modeling effects of subgrid scale topography in shallow coastal marshes, Gulf Estuarine Research Society(GERS) Biennial Meeting, Galveston, TX, USA.

[5] Li, Z. and Hodges, B.R., 2018. Effects of bathymetric errors on salinity modeling in a shallow river delta, The Second International Symposium on Hydraulic Modeling and Measuring Technology (ISHMMT), Nanjing, China.

[4] Hodges, B.R. and Li, Z., 2017. Challenges in Modeling the Spatial Variation of Salinity in a Shallow River Delta, 4th International Symposium on Shallow Flows, Eindhoven, The Netherlands

[3] Li, Z. and Hodges, B.R., 2017. Combining satellite photographs and raster LiDAR data for channel connectivity in tidal marshes, European Geosciences Union General Assembly 2017, Vienna, Austria

[2] Li, Z., Hodges, B.R., Tunnell, J. and Schoenbaechler, C.A., 2015. Modeling the Managed Freshwater Inflows for Restoring the Nueces Delta. World Environmental and Water Resources Congress 2015, Austin, TX, USA

[1] Li, Z., Carothers, R., Lin, Y.X., Passalacqua, P. and Hodges, B.R., 2015. High-resolution Hydrodynamic Modeling of Nueces Delta and Guadalupe Bayou. 2015 Texas Bays and Estuaries Meeting, Port Aransas, TX, USA

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**Honors and Awards**

University of Michigan: Dean's List, 2011-2013

Shanghai Jiao Tong University: Distinguished Leadership, 2010

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