

CHEN, JIA-LIN (Julie)

Assistant Professor, [Department of Hydraulic and Ocean Engineering - NCKU](#)
National Cheng Kung University, Taiwan

Education

Ph.D., Civil and Environmental Engineering

University of Delaware, USA | 2009-2014

M.S., Hydroinformatics and Water Management

Erasmus Mundus Joint Master Program, EuroAqua | 2005-2007

A master degree provided by Newcastle University (UK), University of Nice - Sophia Antipolis (FR), and Brandenburg University of Technology (DE)

B.S., Hydraulic and Ocean Engineering (Major) Computer Science (Minor)

National Cheng Kung University, Taiwan | 2000-2004

Professional experience

Guest Investigator

Applied Ocean Physics & Engineering, WHOI | Aug 2016-Aug, 2017

Postdoctoral Investigator

Applied Ocean Physics & Engineering, WHOI | Mar, 2015-Aug, 2016

Hydrodynamic and sediment transport modelling in Delaware Estuary

Engineer, Project Manager, Business Development Manager

DHI Singapore & Shanghai | 2007-2009

Mike by DHI Technique Support (Hydrodynamic/ Sediment transport modules)

Environmental Monitoring for Dredging & Reclamation

Global Tidal Energy Assessment, Hydraulic Assessment for Marina Design

Flood Risk Analysis/Flood Mapping

Professional Practice

DHI Headquarter, Denmark | Mar, 2007-Agu 2007

Data Assimilation for the North Sea Baltic Sea Tidal Forecasting System

Peer Reviewed Publications

1. [Chen, J.-L.](#), Ralston, D. K., Geyer, W. R., Sommerfield, C., and Chant, B, Wave Energy generation propagation and dissipation in Delaware Estuary, *J. Geophys. Res.*, [In Preparation].
2. [Chen, J.-L.](#), Hsu, T.-J., Shi, F., Raubenheimer, B., and Elgar, S. (2015), Hydrodynamic and sediment transport modeling of New River Inlet (NC) under the Interaction of Tides and Waves, *J. Geophys. Res.*, doi: 10.1002/2014JC010425 (**Fig3 was featured in Journal of Geophysical Research: Oceans Website**).
3. Spydell, M. S., Feddersen, F., Olabarrieta, M., [Chen, J.-L.](#), Raubenheimer, B., and Elgar, S., and Guza, R. T. (2015), Observed and modeled drifters at a tidal inlet, *J. Geophys. Res.*, *J. Geophys. Res. Oceans*, 120, 4825–4844, doi:10.1002/2014JC010541.

4. Rogowski, P., E. Terrill, and J. Chen (2014), Observations of the frontal region of a buoyant river plume using an autonomous underwater vehicle, *J. Geophys. Res. Oceans*, 119, doi:10.1002/2014JC010392 (**Fig6 was featured in Journal of Geophysical Research: Oceans Website**).
5. Chen, J.-L., Shi, F., Hsu, T.-J. and Kirby, J. T., (2014), NearCoM-TVD - A quasi-3D nearshore circulation and sediment transport model, *Coastal Engineering*, 91, 200-212. doi:10.1016/j.coastaleng.2014.06.002 (**Coastal Eng. usage report: 515 views till June, 2015**).

Other Publications

1. Chen, J.-L., Hsu, T.-J., Shi, F., Raubenheimer, B., and Elgar, S. (2014), Hydrodynamic and Sediment Transport modeling of New River Inlet North Carolina, *Proc 34th Int. Conf. Coastal Eng.* 445, 561-576.
2. Hsu, H.-C., Kuo P.-C., Chen, J.-L., Yang B.-D, Hsu T.-J. (2014), A study of wave and tidal current in the ChangHwa-Yulin coastal area by NearCoM model, *Proceeding of the 35th Ocean Engineering Conference in Taiwan*, 173-178.
3. Shi, F., Kirby, J. T., Hsu, T.-J., Chen, J.-L., and Mieras, R., (2013), NearCoM-TVD – A hybrid TVD solver for the nearshore community model documentation and user’s manual, *Research Report No. CACR-13-06*, Center for Applied Coastal Research, University of Delaware.
4. Chen, J.-L., Shi, F., and Hsu, T.-J. (2011), A Numerical Investigation on Hyperpycnal Flow, *The Proceedings of the Coastal Sediments 2011*, 1360-1472. ISBN: 978-981-4355-52-0.
5. Chen, J.-L., Lu, Q. (2008), The Application of 2D Modeling in Different Areas: Yangtze Estuary, Singapore, and Baltic Sea as Examples, *Proceeding of the 30th Ocean Engineering Conference in Taiwan*, 123-128.
6. Chen, P.-H., Chien, H, Chen, J.-L., Kao, C.-C. (2005), On the characteristics of Kuroshio circulation and tidal current in the northwestern Pacific, *Proceeding of the 27th Ocean Engineering Conference in Taiwan*.
7. Chien H., Chen J.-L., Kao, C.C., (2005), On the Short-time Rotary Spectral Analysis to the Drifter Data in the Western Pacific. *Proceedings of the Fifteenth Workshop on Ocean Model (WOM-15)*. Sep. 27-29, Jakarta, Indonesia.

Submitted Abstract

1. Chen, J.-L., Geyer, W. R., and Ralston. D. K. (2016), Flow dynamics and variability in the Delaware Estuary, *AGU Fall Meeting (Oral presentation)*.
2. Wargula, A., Raubenheimer, B., Elgar, S., Geyer, W. R., Traykovski, P., and Chen, J.-L. (2016), Tidal asymmetries in waves, advection, and currents over an ebb shoal, *AGU Fall Meeting*.
3. Geyer, W. R., and Chen, J.-L., (2016), Parameterizing the Dynamics of Wide, Convergent Estuaries, *PECS*, TU Delft, NL.
4. Chen, J.-L., Ralston. D. K., Geyer, W. R., Chant, B and Sommerfield, C., (2016), Wave generation in the Delaware Estuary, *Ocean Sciences Meeting*, New Orleans, LS.
5. Sommerfield, C., Chen, J.-L., Ralston. D. K., Geyer, W. R., and Sommerfield, C., (2016), Indirect Effects and Potential Cumulative Impacts of Dredging in an Urbanized Estuary, *Ocean Sciences Meeting*, New Orleans, LS.

6. Geyer, W. R., Wang T, Ralston. D. K., MacCready P. and Chen, J.-L., (2015), Physical dimensions of interdisciplinary, estuarine classification, *CERF 2015*, Portland, OR.
7. Chen, J.-L., Hsu, T.-J., and Shi, F., (2014), A numerical investigation on the circulation pattern in New River Inlet, NC—the interaction of tides and waves , *Ocean Sciences Meeting*, Honolulu, HI.
8. Chen, J.-L., Hsu, T.-J., Shi, F., (2014), Hydrodynamic and sediment transport modeling of New River Inlet (NC) under the interaction of tides and waves, *Young Coastal Scientists and Engineers Conference 2014*, Newark, DE.
9. Spydell, M. S., Feddersen, F., Guza, R. T., Chen, J.-L., Raubenheimer, B., and Elgar, S., (2014), Observed and NearCoM modeled currents, material transport and dispersion at the new river inlet, NC, *Ocean Sciences Meeting*, Honolulu, HI.
10. Chen, J.-L., Hsu, T.-J., and Shi, F., (2013), A numerical investigation on the circulation pattern in New River Inlet, NC—the interaction of tides and waves , *Coastal Ocean Circulation, Gordon Research Conference*, Biddeford, ME.
11. Chen, J.-L., Hsu, T.-J., Shi, F., Raubenheimer, B., and Elgar, S., (2012), Hydrodynamics in New River Inlet, NC – a Numerical Investigation using NearCoM-TVD, *AGU Fall Meeting*, San Francisco, CA. **(Oral presentation)**
12. Spydell, M. S., Chen, J.-L., Hsu, T.-J., Feddersen, F., and Guza, R.T., (2012), Observed and Simulated Drifter Tracks and Lyopanov Exponents During the RIVET 2012 Experiment, *AGU Fall Meeting*, San Francisco, CA.
13. Chen, J.-L., Hsu, T.-J., and Shi, F., (2012), A numerical investigation on the circulation pattern in New River Inlet, NC—the interaction of tides and waves , *Ocean Sciences Meeting*, Salt Lake City, UT.
14. Hsu, T.-J., Chen, J.-L., and Geyer, W. R., (2012), On the occurrence of low concentration hyperpycnal flow, *Ocean Sciences Meeting*, Salt Lake City, UT.
15. Hsu, T.-J., Ozdemir, C. E., Yu, X., Snyder P. J., Chen, J.-L., and Shi, F., (2010), The trapping and delivery of fine sediment in the coastal environment, *AGU Chapman Conference for sediment source to sink*.
16. Xiao, Y., Snyder P. J., Chen, J.-L., and Hsu, T.-J., (2010), Convective instability and its implication to settling of fine sediment off river plume, *Ocean Sciences Meeting*, Portland, OR.
17. Chen, J.-L., Hsu, T.-J., and Shi, F., (2010), A numerical investigation on the dynamics of hyperpycnal flow, *Western Pacific Geophysics Meeting*, Taipei, Taiwan. **(Oral presentation)**

Invited Seminars

1. University of Washington, 28th Mar, 2016 “Hydrodynamic and sediment transport in inlets and river mouths”
2. Louisiana State University, 29th Feb, 2016 “A field and numerical experiment in New River Inlet, NC”
3. MIT-WHOI Joint Program CODFL student seminar, 10th Apr, 2015 “Hydrodynamics, sediment transport, and morphological evolution in inlets and river mouths”
4. University of Maine, 8th Dec, 2015 “Hydrodynamic and sediment transport modeling in inlets and river mouths”
5. National Central University, 11th Jun, 2014 “Hydrodynamic and sediment transport modeling in New River Inlet, NC”
6. Hohai University, China. 20th May, 2014, “Hydrodynamic and sediment transport modeling in New River Inlet, NC”

Oral Presentations

1. A numerical investigation of wave-current interaction in New River Inlet using NearCoM-TVD – residual flow and sediment transport, *ONR annual review*, Navy League Building, Arlington, VA, April 2014.
2. Hydrodynamic modeling of New River Inlet using NearCoM-TVD -Model/data comparisons, *ONR annual review*, Navy League Building , Arlington, VA, April 2013.

Field Experiment

1. CTD cast, Newark Bay and Hudson River | June 29-30th, 2016
2. Cruise on R/V Sharp (CTD cast) Newark Bay and Hudson River | May 10-13th, 2016
3. Tripod deployment and sediment coring, Connecticut River | Sep 26-28th 2015
4. Drifter experiment, Katama Bay, MA | Aug 17th 2015
5. CT deployment and recovery, Connecticut River | June 17th 2015
6. Cruise on R/V Sharp (wave gauges recovery) Delaware Bay | Mar 23-25, 2015
7. Vectrino, PT, and OBS deployment in salt marsh, Kent County, Delaware | Mar 26th 2013, Oct 11-12th 2014

Modeling Skill

Non-hydrostatic Navier-Stokes Solver: OpenFOAM, COBRAS, NHWAVE
Wave and circulation, sediment transport model:
NearCoM-TVD (Chen et al., 2014, *Coastal Eng.*), COWAST, FCVOM

Awards

Erasmus Mundus Scholarship, European Commission | 2007-2009
Two year full scholarship for Joint Master Program in Europe
The First Prize of 2004 English Presentation Contest | 2004
Taiwan international Group of American Society of Civil Engineers (ASCE)

Reviewer Service

Journal of Geophysical Research (AGU)
Ocean Modelling, Ocean Engineering, Estuarine, Coastal and Shelf Science (Elsevier)
Journal of Engineering Mechanics (ASCE)

Affiliation and Service

Session Chair, Nearshore Processes, *AGU Fall Meeting* | Dec, 2016
WHOI Postdoctoral Representative | Nov, 2015 - Oct, 2016
Session Convener, Young Coastal Scientists and Engineers Conference, North America | June, 2014
Vice President, Taiwanese Student Association at U of Delaware | 2010-2011
Program Assistant, DAAD (The German Academic Exchange Service) summer institute |

summer, 2004

Public Representative, National Cheng Kung University Student Association | 2000-2001