Navid Tahvildari, Ph.D.

Assistant Professor
Department of Civil and Environmental Engineering
Old Dominion University

ntahvild@odu.edu
Office: (757) 683-3359
www.odu.edu/~ntahvild
Old Dominion University
130C Kaufman Hall,
Norfolk, VA 23529

Education

- Post.Doc., Civil and Environmental Engineering, Stanford University, CA 2014
- Ph.D., Civil Engineering, Texas A&M University, College Station, TX 2011
- M.Sc., Civil Engineering, Sharif University of Technology, Tehran, Iran 2007
- B.Sc., Civil Engineering, Tehran Polytechnic, Tehran, Iran 2005

Experience

- Assistant Professor, June 2014 – present
  Department of Civil and Environmental Engineering, Old Dominion University,
- Postdoctoral Scholar November 2011 – May 2014
  Environmental Fluid Mechanics Laboratory, Stanford University
- Graduate Research Assistant September 2007 – October 2011
  Coastal & Ocean Engineering Program, Texas A&M University

Journal Papers

- **Tahvildari, N.**, Kaihatu, J. M. "A mechanism for generation of multi-harmonic waves over lutocline" (in preparation).
- **Tahvildari, N.**, Zeller, R., Kaihatu, J. M. "Nonlinear wave evolution over flexible vegetation" (in preparation).
- **Tahvildari, N.**, Lynett, P. J., Kaihatu, J. M. "A Numerical two-layer Boussinesq Model for Internal Wave Propagation over Variable Bathymetry" (in preparation).
- **Tahvildari, N.**, Fringer, O. B., Peacock, T. "A parametric study of nonlinear internal tide energetics over a submerged ridge", in preparation for the *Journal of Physical Oceanography*.
- **Tahvildari, N.**, Kaihatu, J. M., Saric, W. S. (2016) "A Two-layer Model for generation of Internal Waves by surface Waves", revised, March *Ocean Modelling*.
- **Tahvildari, N.**, Jamali, M. (2012) "Cubic nonlinear analysis of generation of interfacial waves by a surface wave in an open two-layer fluid", *Fluid Dynamics Research*, 44, 055502, DOI: FDR-D-11-00152.

- Kaihatu, J. M., **Tahvildari, N.** (2012) "The combined effect of wave-current interaction and mud-induced damping on nonlinear wave", *Ocean Modelling*, 41, 22–34, DOI: 10.1016/j.ocemod.2011.10.004.

- **Tahvildari, N.**, Kaihatu, J. M. (2011) "Optimized determination of viscous mud properties using a nonlinear wave-mud interaction model", *Journal of Atmospheric and Oceanic Technology*, 28, 1486–1503. DOI: 10.1175/JTECH-D-11-00025.1

Conference Proceedings

- **Tahvildari, N.**, Lynett, P. J., and Kaihatu, J. M. (2014) "A numerical code for waves in a two-layer shallow fluid ", *Proceedings of ASME 33rd International Conference on Ocean, Offshore and Arctic Engineering*, San Francisco, CA, doi:10.1115/OMAE2014-24455.

- **Tahvildari, N.**, Kaihatu, J. M. (2011) "Generation of oblique interfacial waves due to resonant interaction with surface gravity waves in shallow water", *Proceedings of the MTS/IEEE Oceans Conference*, Kona, HI.

- **Tahvildari, N.**, Kaihatu, J. M. (2009) "Inverse deduction of mud parameters from free surface wave energy in muddy coasts", *Proceedings of the 33rd IAHR Congress*, Vancouver, BC, 2870–2877.

- **Tahvildari, N.**, Jamali, M. (2009) "Analytical Cubic Solution to Weakly Nonlinear Interactions between Surface and Interfacial waves", *Proceedings of the ASME 28th International Conference on Ocean, Offshore and Arctic Engineering*, Honolulu, HI, doi:10.1115/OMAE2009-80120.

Selected Lectures and presentations

- **Tahvildari, N.**, Zeller, R. B., and Kaihatu, J. M. "A Numerical Study on Wave Evolution in Interaction with Flexible Vegetation", (Oral), *Ocean Sciences Meeting*, New Orleans, LA, February 2016.

- **Tahvildari, N.**, Kaihatu, J. M., and Saric, W. S. "Multi-Harmonic Wave Pattern over Lutocline", (Oral), *Young Coastal Scientists and Engineers Conference-North America*, University of Delaware, August 2015.

- **Tahvildari, N.**, Peacock, T., and Fringer, O. B. "A parametric study of nonlinear and nonhydrostatic effects on internal tide generation over a submerged ridge", (Poster), *AGU Ocean Sciences Meeting*, Honolulu, HI, February 2014.

- **Tahvildari, N.**, Fringer, O. B., and Peacock, T. "Nonhydrostatic and nonlinear energetics of internal tides over submerged ridges", (Poster), *Ocean Turbulence Conference*, 33^{rd} Center for Nonlinear Studies Annual Conference, Los Alamos National Laboratory, Santa Fe, NM, June 2013.

- **Tahvildari, N.**, and Kaihatu, J. "Spatial Evolution of Nonlinear Long Interacting Surface and Interfacial Waves", (Poster), *12th International Workshop on Wave Forecasting and Hindcasting*, Kona, HI, October 2011.

- **Tahvildari, N.** "Nonlinear wave interactions in a two-layer fluid", Environmental Fluid Mechanics Laboratory, Stanford University, June 2011.

- **Tahvildari, N.**, Kaihatu, J. M. "Resonant interactions between long weakly nonlinear surface and interfacial waves", (Poster), *AGU Fall Meeting*, San Francisco, CA, December 2010.
- **Tahvildari, N.**, Kaihatu, J. M. "Nonlinear resonant generation of two interfacial waves due to interaction with a surface wave in shallow water", (Oral), *AGU Ocean Sciences Meeting*, Portland, Oregon, February 2010.
- **Tahvildari, N.**, Kaihatu, J. M. "Invertibility and Predictability in Wave–Mud interaction", (Oral) *AGU Chapman Conference on Physics of Wave-Mud Interaction*, Amelia Island, Florida, November 2008.
- **Tahvildari, N.** "Nonlinear shallow water waves and Kortweg–de Vries (KdV) equations", Advanced Mathematics Seminar, Department of Mechanical Engineering, Sharif University of Technology, Tehran, Iran, January 2007.

Research Funding

- "Investigating the Vulnerability of the Transportation Infrastructure in Hampton Roads Region to Extreme Weather and Sea Level Rise", Sponsor: *Virginia Department of Transportation*, PI: Tahvildari, Co-PI: Cetin
- "Investigating the effects of living shorelines in mitigation against coastal storms", Sponsor: *Virginia Sea Grant* (*Program Development Grant*), PI: Tahvildari, Co-PI: Boswell (Ph.D. Student)
- "Modeling the Protection Services of Flood Mitigation Measures in the City of Franklin, Virginia", Sponsor: *Private Sector*, PI: Tahvildari, Co-PI: Ma
- "Dissipative effect of coastal vegetation on water waves", Sponsor: *Office of Research, Old Dominion University*, Summer Research Fellowship Program.

Graduate Students

- Ph.D.
  - Maura Boswell (Expected: Spring 2018)
  - Elham Sharifineyestani (Expected: Spring 2019)
- M.Sc.
  - Steven Traynum (Expected: December 2016)
  - Luca Castrucci (Expected: December 2017)
- M.E.
  - Crystal Bloom (Defended: August 2015)

Teaching

- Graduate Level:

- Environmental Fluid Mechanics (CEE 795/895), ODU Spring 2016
- Coastal Hydrodynamics and Sediment Processes (CEE 788/888), ODU Fall 2015
- Coastal Infrastructure Resiliency Module - Transportation Sustainability (CEE 595), ODU Fall 2015
- Dredging and Beach Engineering (CEE 787/887), ODU Spring 2015

- Undergraduate Level:
  - Hydromechanics (CEE 330), ODU Spring 2016
  - Exploring Engineering and Technology (ENG 110), ODU Fall 2015
  - Fluid Dynamics (CVEN 311)(Guest lecturer), TAMU Spring 2011

- Other:
  - Infrastructure Impacts of Sea Level Rise (Co-Instructor), Transportation Training Academy Workshop, University of Virginia Virginia Beach, May 5, 2015

Editorials

Reviewer:

- National Science Foundation
- Journal of Geophysical Research-Oceans
- Journal of Physical Oceanography
- Journal of Engineering Mechanics
- Coastal Engineering Journal
- Journal of Marine Science and Engineering

Service

- Conferences/Workshops
  - Session Moderator, Nearshore Processes, Ocean Sciences Meeting, New Orleans, LA February, 2016
  - Session Facilitator, Design of Living Shorelines, Workshop on Engineering, Design and Implementation of Natural Coastal Infrastructure Solutions to Enhance Hampton Roads′ Resiliency, Norfolk, VA February, 2016

- Department and University
  - Student Project Committee member, Batten College of Engineering, Fall 2014 - present
  - Faculty meeting secretary, Civil and Environmental Engineering Department, Fall 2014 - present

Honors & Awards

- 2016 ASCE ExCEEd Teaching Fellow
- Jelesnianski Fellowship in Coastal Engineering, Texas A&M University 2009-2010
- Student Poster Program Award, MTS/IEEE Oceans Conference, Kona, HI 2011
- Outreach for Engineers Specialty Forum Scholarship, Offshore Mechanics and Ocean Engineering Conference (ASME-IPTI), San Francisco, CA 2014
- Chi Epsilon, Civil Engineering Honor Society

Technical Skills

- Programming Languages/Engineering Softwares: Matlab, Mathematica, C, Fortran
- Coastal and Ocean Models: SUNTANS, REFDIF, MONGOOSE (a RANS-VOF model), GOTM, Delft3D, SWAN
- Parallel Computing: Unix OS, Shell Scripting

Professional Memberships

- American Geophysical Union (AGU)
- American Society of Civil Engineers (ASCE)
- Coasts, Oceans, Ports and Rivers Institute (COPRI)