

Yoshimitsu Tajima, Ph.D.

Professor, the University of Tokyo,  
School of Engineering, Department of Civil Engineering,  
Coastal Engineering Laboratory

Hongo 7-3-1, Bunkyo-ku, Tokyo, Japan  
113-8656  
phone:+81-3-5841-6111  
Fax: +81-3-5841-8503  
e-mail: yoshitaji@coastal.t.u-tokyo.ac.jp

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### Personal Statement

Dr. Tajima has experience of coastal engineering both in academic research and practical engineering jobs since 1995. As a research engineer at the Institute of Penta-Ocean Construction, he was involved in various coastal projects such as designs and environmental assessment of the newly extended runway of Tokyo International Airport. After moving back to the University of Tokyo in 2005, he effectively integrated practical experiences and academic background of nearshore hydrodynamics to extend his research focus to various aspects of coastal vulnerabilities, e.g., storm surge disasters due to Hurricane Katrina and Cyclone Sidr, tsunami deposits in Sri Lanka, locally concentrated coastal damages due to multi-specter stormy waves, and interactive wave-current field and dynamic erosions around the Tenryu river mouth. Besides various numerical approaches, he has strength in experiences of laboratory and field studies. As a key member of JSCE field survey team, for example, he carried out disaster surveys of Katrina, Sidr, Haiyan, Pam, Meranti and 2011 Tohoku earthquake tsunami. His recent study is further extended to satellite-based nearshore monitoring system for evaluations of large-scale coastal vulnerability under collaborative research project with JAXA, Japanese space agency.

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### Education

Doctor of Philosophy in Environmental Fluid Mechanics

Dept. of Civil & Environmental Engineering, Massachusetts Institute of Technology, June 2004

Master of Science

Dept. of Civil & Environmental Engineering, Massachusetts Institute of Technology, June 2001

Bachelor of Engineering

Dept. of Civil Engineering, The University of Tokyo, March 1996

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### Professional Experience

Researcher, Penta-Ocean Construction, Co., Ltd, Apr.1996-Aug.1999, Feb.2004-Aug.2005

Research Assistant, Massachusetts Institute of Technology, Sep.2001-Jan.2004

Assistant professor, the University of Tokyo, Sep.2005-Mar.2007

Associate professor, the University of Tokyo, Apr.2007-Mar. 2013

Professor, the University of Tokyo, Apr.2013-present

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### Selected Publications (171 peer reviewed full papers as of March, 2022)

Tajima, Y., & O. S. Madsen : Modeling near-shore waves, surface rollers, and undertow velocity profiles, *J. of Waterway, Port, Coast. and Ocean Eng.*, 132(6), pp. 429-438, 2006. doi: 10.1061/(ASCE)0733-950X(2006)132:6(429).

Shimozono, T., S. Sato, A. Okayasu, Y. Tajima, M. F. Hermann, H. Liu & T. Takagawa: Propagation and inundation characteristics of the 2011 Tohoku tsunami on the central Sanriku coast, *Coast. Eng. J.*, 54(1), 2012.

Tajima, Y., T. Yasuda, B.M. Pacheco, E.C. Cruz, et al., Initial report of JSCE-PICE Joint Survey on storm surge disaster caused by typhoon Haiyan, *Coast. Eng. J.*, 56, 1450006, doi:10.1142/S0578563414500065, 2014.

Shimozono, T., Tajima, Y., Kennedy, A.B., Nobuoka, H., Sasaki, J. & S. Sato, Combined infragravity wave and sea-swell runup over fringing reefs by super typhoon Haiyan, *J. of Geo. Res. Oceans*, 120, doi:10.1002/2015JC010760, 2015.

Tajima, Y., Gunasekara, K.H., Shimozono, T. & E.C. Cruz, Study on locally varying characteristics induced by super typhoon Haiyan. Part I: Dynamic behavior of storm surge and waves around San Pedro Bay, *Coast. Eng. J.*, 58(1), 1640002, doi:10.1142/S0578563416400027, 2016.

Tajima, Y., Shimozono, T., Gunasekara, K.H., & E.C. Cruz, Study on locally varying characteristics induced by super typhoon Haiyan. Part II: Deformation of storm waves on the beach with fringing reef along the east coast of Eastern Samar, *Coast. Eng. J.*, 58(1), 1640003, doi:10.1142/S0578563416400039, 2016.

Hussain, M.A. & Y. Tajima: Numerical investigation of surge-tide interactions in the bay of Bengal along the Bangladesh coast, *Natural Hazards*, vol.86, issue2, pp.669-694, doi: 10.1007/s11069-016-2711-4, 2016.

Tajima, Y., Lapidez, J.P., Camelo, J., Saito, M., Matsuba, Y., Shimozono, T., Bautista, D., Turiano, M. & E. Cruz: Post-Disaster Survey of Storm Surge and Waves along the Coast of Batanes, the Philippines, caused by Super Typhoon Meranti / Ferdie, *Coastal Engineering Journal*, DOI: 10.1142/S0578563417500097, 2017.

Tajima, Y., Gunasekara, K. & H. T. Nguyen: Satellite-based monitoring of contrasting characteristics of suspended sediment discharged from the Red and the Ma river systems along the northern coast of Vietnam, *Int. J. of Sediment Research*, doi:10.1016/j.ijsrc.2018.08.004, 2018.

Tajima, Y., Takagawa, T., Sato, S. & S. Takewaka: Collapse and recovery process of the sand spit at the Tenryu River mouth on the Pacific Coast of Japan, *Coastal Engineering Journal*, DOI: 10.1080/21664250.2018.1546264.

Tajima, Y., Wu, L., Fuse, T., Shimozono, T. & S. Sato: Study on shoreline monitoring system based on satellite SAR imagery, *Coastal Engineering Journal*, 2019, doi: 10.1080/21664250.2019.1619252.

Tajima, Y., Wu, L. & K. Watanabe: Development of a shoreline detection method using an Artificial Neural Network based on satellite SAR imagery, *Remote Sensing* 13(12) 2254-2254, 2021, doi:10.3390/rs13122254