Curriculum Vitae

Name: Pengzhi Lin

Current Position: CJSP Chair Professor
State Key Laboratory of Hydraulics and Mountain River Engineering
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Education: B. E.   Dept. of Civil Engineering, Tianjin University (Structural Engineering), 1991
M. S.   Dept. of Civil Engineering, University of Hawaii, Manoa (Environmental Engineering), 1993
Ph. D. School of Civil and Environmental Engineering, Cornell University (Hydraulic Engineering), 1998

Research Experience: Postdoctoral Associate, Cornell University, 1998-1999
Postdoctoral Fellow, Hong Kong Polytechnic University, 1999-2000
Assistant Professor, National University of Singapore (NUS), 2000-2005
Associate Professor, National University of Singapore, 2005-2007
Adjunct Professor and CJSP Chair Professor, Sichuan University, Since 2005
Visiting Professor, National University of Singapore, 2012-2015

Research Interests:
1. Computational Fluid Dynamics (CFD)
2. Hydraulics and River dynamics
3. Coastal, ocean and offshore engineering

Current Research Topics:
1. Dam-break flows and risk analysis
2. Sediment transport and long-term river & beach morphology
3. Fluid-structure interaction
4. Air entrainment and air-water two-phase flow modeling
5. Turbulent flows in vegetation domain

Editorial Works for International Journals
1. *Applied Ocean Research* (Editor-in-Chief)
2. *Journal of Hydro-environment Research* (Associate Editor)
3. *Journal of Ocean Engineering and Marine Energy* (Associate Editor)
4. *Ocean Engineering* (Editorial Board Member)
5. *Journal of Earthquake and Tsunami* (Editorial Board Member)
6. *Engineering Application of Computational Fluid Mechanics* (Editorial Board Member)

Research Projects:

Project title	Funding agency	Approved year	PI or Co-PI
Three-Dimensional Modeling of Breaking Wave Interaction with Structures	NUS	2001	PI
Development of Wave and Surge Model under Extreme Wind Conditions	NUS and National Environmental Agency (NEA) (Singapore)	2001	PI
Wave-Induced Mine Burial into Seabed	NUS, Defense Science and Technology Agency (Singapore), and Office of Naval Research (USA)	2002	Co-PI
Heavy Lift Dynamics	NUS, Keppel Offshore & Marine, and Maritime and Port Authority of Singapore (MPA)	2003	Co-PI
Development of a Numerical Model for Fluid Interaction with Moving Bodies	NUS	2004	PI
Development of Three-dimensional Numerical Wave Tank	Sichuan University	2004	PI
Research into Super-Large Floating Container Terminal	MPA	2005	Co-PI
Modeling and Mitigation of LNG sloshing in membrane tanks	MPA-NUS maritime research programme	2005	Co-PI
Effect of GrahamTek Flow Distributor on Performance of Reverse Osmosis Process for Desalination	GrahamTek Singapore Pte Ltd	2005	Co-PI
Study of air entrainment on free surfaces	National Science Foundation of China (NSFC)	2005	PI
Vulnerability Study of coastal stability due to global warming	NEA	2006	PI
Study of local scouring on beds	National Science Foundation of China (NSFC)	2006	PI
Development of 3D Numerical Wave Tank (NEWTANK)	Ministry of Education, China	2007	PI
Turbulence characteristics in vegetated flow region	Ministry of Education, China	2008	PI
Multi-scale modeling of moored floating body motion	National Science Foundation of China	2010	PI
Experimental and numerical study of flow pattern around a groin in a navigation channel	Changjiang Navigation Bureau, China	2010	PI
Wave transformation and dissipation in the vegetated surf zone	National Science Foundation of China	2013	PI
Risk analysis of cascade dam break flows under combined extreme conditions	973 Key Research Program of Ministry of Science and Technology	2013	PI
Earthquake-induced surge waves in large reservoir and their impact on high dams	National Science Foundation of China	2015	PI
Flood prediction and mitigation in Mountainous areas	Sichuan Province, China	2016	PI

Selected Publication

Editors of Proceedings and/or Books

[1] Shankar, N. J., Cheong, T. A., and Lin, P., 2001. Proceedings of the inaugural (first) international conference on port and maritime: R & D and technology.
[2] Guo, J., Liong, S. Y., Lin, P., Shankar, N. J., and Cheong, H. F., Yang S. Q., 2002. Proceedings of 13th Congress of the Asia and Pacific Division of the International Association for Hydraulic Engineering and Research (IAHR), World Scientific.

Book(s) and Chapter(s) in Book(s)

[1] Lin, P. and Liu, P. L.-F., 1999. Free surface tracking methods and their applications to wave hydrodynamics. Advances in Coastal and Ocean Engineering, Vol. 5, 330-351, World Scientific.
[2] Lin, P., 2008. Numerical Modeling of Water Waves. Taylor & Francis, Co., U.K.

Selected Journal Papers

[1] Liu, X., Shao, S., Lin, P., and Tan, S. K., 2016. 2D Numerical ISPH Wave Tank for Complex Fluid–Structure Coupling Problems. *International Journal of Offshore and Polar Engineering*, 26(1), Doc. No.: ISOPE-16-26-1-026.
[2] Lin, P., Cheng, L., and Liu, D., 2016. A two-phase flow model for wave–structure interaction using a virtual boundary force method. *Computers & Fluids*, 129, 101-110.
[3] Lin, P., Liu, X., and Zhang, J., 2015. The simulation of a landslide-induced surge wave and its overtopping of a dam using a coupled ISPH model. *Engineering Applications of Computational Fluid Mechanics*, 9(1), 432-444.
[4] Zhang, Y. and Lin, P., 2015. An improved SWE model for simulation of dam-break flows. *Proceedings of the Institution of Civil Engineers - Water Management*, DOI: 10.1680/wama.15.00021.
[5] Tang, L. and Lin, P, 2015. Numerical modeling of oscillatory turbulent boundary layer flows and sediment suspension. *Journal of Ocean Engineering and Marine Energy*, 1(2), 133-144.
[6] Liu, X., Lin, P., and Shao, S., 2015. ISPH wave simulation by using an internal wave maker. *Coastal Engineering*, 95, 160-170.
[7] Kang, A,, Lin, P., Lee, Y. J., and Zhu, B., 2015. Numerical simulation of wave interaction with vertical circular cylinders of different submergences using immersed boundary method. *Computers & Fluids*, 106, 41-53.
[8] Ha, T., Shim, J., Lin, P., and Cho, Y.-S., 2014. Three-dimensional numerical simulation of solitary wave run-up using the IB method. *Coastal Engineering*, 84, 38-55
[9] Liu, X., Lin, P., and Shao, S., 2014. An ISPH simulation of coupled structure interaction with free surface flows. *J. Fluids & Structures*, 48, 46-61.
[10] Ha, T., Lin, P., and Cho, Y. S., 2013. Generation of 3D regular and irregular waves using Navier–Stokes equations model with an internal wave maker. *Coastal Engineering*, 76, 55-67.
[11] Gu, H. B., Qian, L., Causon, D. M., Mingham, C. G., and Lin, P., 2014. Numerical simulation of water impact of solid bodies with vertical and oblique entries. *Ocean Engng.*, 75, 128-137.
[12] Adityawan, M. B., Tanaka, H., and Lin, P., 2013. Boundary layer approach in the modeling of breaking solitary wave runup. *Coastal Engineering*, 73, 167-177.
[13] Xue, M., Lin, P., Zheng, J., Ma, Y., Yuan, X., and Nguyen, V., 2013. Effects of Perforated Baffle on Reducing Sloshing in Rectangular Tank: Experimental and Numerical Study. *China Ocean Engng.*, 27(5), 615-628.

[14] Zhu, H., Qi, X., Lin, P., and Yang, Y., 2013. Numerical simulation of flow around a submarine pipe with a spoiler and current-induced scour beneath the pipe. *Applied Ocean Research*, 41, 87-100.

[15] Han X. and Lin, P., 2013. Discussion on "Permeability effects of single groin on flow characteristics by JOONGU KANG, HONGKOO YEO, SUNGJUNG KIM and UN JI, J. Hydraulic Res. 49(6), 2011, pp. 728-735", *Journal of Hydraulic Research*, 51(1), 102.

[16] Liu, X., Xu, H., Shao, S., and Lin, P., 2012. An improved incompressible SPH model for simulation of wave-structure interaction. Computers & Fluids, 71, 113-123.

[17] Huang, Z. and Lin, P., 2012. Numerical simulation of propagation and breaking processes of a focused waves group. *J. Hydrodynamics*, 24(3), 399-409.

[18] Su, X., Zou, D., Zhang, J., Leschka, S., and Lin, P., 2012. A novel adaptive s coordinate model and its applications to wave and structure interaction. *J. Hydrodynamics*, 24(3), 323-331.

[19] Liu, H., Luo, J., Lin, P., and Liu, R, 2012. An Analytical Solution for Long-Wave Reflection by a General Breakwater or Trench with Curvilinear Slopes. *J. Eng. Mech.*, 139(2), 229-245.

[20] Liu, H., Yang, J., and Lin, P., 2012. An analytic solution to the modified mild-slope equation for wave propagation over one-dimensional piecewise smooth topographies, *Wave Motion*, 49(3), 445–460

[21] Xue, M.A., Zheng, J., and Lin, P., 2012. Numerical Simulation of Sloshing Phenomena in Cubic Tank with Multiple Baffles. *Journal of Applied Mathematics*, 2012, ID 245702, 21 pages, doi:10.1155/2012/245702.

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[23] Lin, P., Wu, Y., Bai, J., and Lin, Q., 2011. A Numerical Study of Dam-Break Flow and Sediment Transport from a Quake Lake. *J. Earthquake and Tsunami*, 5(5), 401-428.

[24] Xue M.-A. and Lin, P. Z., 2011. Numerical study of ring baffle effects on reducing violent liquid sloshing. *Computers & Fluids*, 52, 116-129

[25] Fernando, P. C., Guo, J. and Lin, P., 2011. Wave–current interaction at an angle 1: experiment. *J. Hydraul. Res.*, 49(4), 424-436.

[26] Fernando, P. C., Lin, P. and Guo, J., 2011. Wave–current interaction at an angle 2: theory. *J. Hydraul. Res.*, 49(4), 437-449.

[27] Yang, S.-Q. and Lin, P., 2011. Coastal Reservoir by Soft-Dam and its Possible Applications. *Recent Patents on Engineering*, 5(1), 45-56.

[28] Jiang X., Wu M., Li Y., and Lin P., 2010. Study on the flow field around vertical breakwater under different overtopping conditions based on numerical simulation. *China Ocean Engineering*, 45-50.

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[46] Lin, P. and Wang D., 2006. Numerical Modeling of 3D Stratified Flows with Free Surfaces: A Case Study of Sediment Dumping. *International Journal for Numerical Methods in Fluids*, 50(12), 1425-1444.

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[49] Su, X. and Lin, P., 2005. A Hydrodynamic study on flow motion with vegetation. *Modern Physics Letters B*, 19(28-29), 1659-1662.

[50] Lin, P., Li, C. W. and Liu H., 2005. A wave height spectral model for simulation of wave diffraction and refraction. *Journal of Coastal Research*, SI 42, 448-459.

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