YANJI WEI, PhD

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PROFILES

Yanji Wei is an assistant professor in Eastern Institute for Advanced Study. He graduated in harbor and coastal engineering from Tongji University, China in 2006 and received his PhD in 2015 from University College Dublin, Ireland. In 2016-2019 he held a post-doctoral position in University of Groningen, the Netherlands. He became a consulting engineer in Aktis Hydraulics B.V. since 2019. His fields of expertise include numerical/mathematical modelling for various ocean engineering problems such as hydrodynamics, hydraulics modelling, metocean analysis, dynamic mooring analysis, marine bathymetrical and geophysical survey.

Yanji's research interest includes marine renewable energy technology; applied research in harbor, coastal and offshore engineering; intracranial hemodynamics.

Google scholar profile:
https://scholar.google.nl/citations?user=jiG2jRgAAAAJ&hl=en

EDUCATION

10/2015: Ph.D., Applied Mathematics, University College Dublin, Dublin, Ireland
07/2009: M.Sc. Harbor, Coastal and Offshore Engineering, Second Institute of Oceanography, Hangzhou, China
07/2006: B.Sc. in Harbour, Water Channels and Coastal Engineering, Tongji University, Shanghai, China

EMPLOYMENT

Assistant professor at Eastern Institute for Advanced Study, Ningbo, China	since 08/2022
Specialist ship hydrodynamics at Aktis Hydraulics, Zwolle, The Netherlands	05/2019-07/2022
Postdoctoral researcher at University of Groningen, Groningen, The Netherlands	06/2016-06/2019
Marine Engineer at Second Institute of Oceanography, Hangzhou, China	07/2009 – 09/2012

PUBLICATIONS

Shen, Y. †, **Wei, Y.** †, Bokkers, R. P., Uyttenboogaart, M., & Van Dijk, J. M. C. Patient-specific cerebral blood flow simulation based on commonly available clinical datasets. Frontiers in Bioengineering and Biotechnology, 197(2022).

Shen, Y., Molenberg, R., Bokkers, R.P., Wei, Y., Uyttenboogaart, M. and van Dijk, J.M.C., The Role of Hemodynamics through the Circle of Willis in the Development of Intracranial Aneurysm: A Systematic Review of Numerical Models. Journal of personalized medicine, 2022: 12(6), p.1008.

Yin, M., Hu, H., Wu, K., **Wei, Y**., Zhang, X., Zhu, K., & Yan, X. Computational study on effects of jet fans to traffic force in highway tunnel. Tunnelling and Underground Space Technology, 118(2021), 104155.

Zhang, C., **Wei, Y.**, Dias, F., Hu, X, An efficient fully Lagrangian solver for modeling wave interaction with oscillating wave surge converter. Ocean Engineering 236 (2021): 109540.

Wei, Y., Bechlenberg, A., Jayawardhana, B., and Vakis, A. I., Modelling of a wave energy converter array with nonlinear power take-off using a mixed time-domain/frequency-domain method. IET Renewable Power Generation, (2021): 1-12.

Shen, Y., **Wei, Y**., Bokkers, R. P., Uyttenboogaart, M., & van Dijk, J. M. C. (2020). Study protocol of validating a numerical model to assess the blood flow in the circle of Willis. BMJ Open, 10(6), e036404.

Tay, Z. Y, and **Wei, Y**., Power enhancement of pontoon-type wave energy convertor via hydroelastic response and variable power take-off system. Journal of Ocean Engineering and Science 5.1 (2020): 1-18.

Wei, Y., Bechlenberg, A., van Rooij, M., Jayawardhana, B., and Vakis, A. I., Modelling of a wave energy converter array with a nonlinear power take-off system in the frequency domain. Applied Ocean Research, 90 (2019): 101824.

Wei, Y., Barradas-Berglind, J. J., Yu, Z., van Rooij, M., Prins, W. A., Jayawardhana, B., and Vakis, A. I., Frequency-Domain Hydrodynamic Modelling of Dense and Sparse Arrays of Wave Energy Converters. Renewable Energy, 135 (2019): 775: 788.

Renzi, E, **Wei, Y**, and Dias, F. The pressure impulse of wave slamming on an oscillating wave energy converter. Journal of Fluids and Structures 82 (2018): 258-271.
Barradas-Berglind, J. J., Dijkstra, T., **Wei, Y**., van Rooij, M., Meijer, H., Prins. W. A., Vakis, A. I., Jayawardhana, B., Revenue maximisation and storage utilisation for the Ocean Grazer wave energy converter: a sensitivity analysis. IET Renewable Power Generation, 12(11), (2018): 1241-1248.
Dias, F., Renzi, E., Gallagher, S., Sarkar, D., **Wei, Y**., Abadie, T., and Rafiee, A., Analytical and computational modelling for wave energy systems: the example of oscillating wave surge converters. Acta Mechanica Sinica, (2017): 1-16.
Wei, Y., Barradas-Berglind, J. J., van Rooij, M., Prins, W. A., Jayawardhana, B., and Vakis, A. I., Investigating the adaptability of the multi-pump multi-piston power take-off system for a novel wave energy converter. Renewable Energy, 111 (2017): 598-610.
Wei, Y., Abadie, T., and Dias, F., A cost-effective method for modelling wave-OWSC interaction. International Journal of Offshore and Polar Engineering, 27(4) (2017): 366-373.
Wu, K, Zhu, K., Zhang, X., Kang, C., and **Wei, Y**.*, A zonal different-time-step algorithm for multi-physics simulation in closed system. Journal of Signal Processing Systems, 86, no. 2-3 (2017): 279-288.
Wei, Y., Abadie, T., Henry, A., and Dias, F., Wave interaction with an oscillating wave surge converter, Part II: Slamming. Ocean Engineering, 113 (2016): 313-334.
Wei, Y., Rafiee, A., Henry, A., and Dias, F., Wave interaction with an oscillating wave surge converter, Part I: Viscous effects. Ocean Engineering, 104 (2015): 185-203.
Huang, B., Qiu, J., **Wei, Y.**, 3D Numerical Analysis on Flow and Sediment Diversion for the Submerged Vanes. Chinese Journal of Hydrodynamics. 2014, 02: 238-244. (In Chinese)
Lai, X., Ye, Y., **Wei, Y**., Gou, Z., Fu, X., Preliminary Study on the Process of Scouring and Self-Burying of Submarine Pipeline in Hangzhouwan Bay. Journal of Marine Sciences. 2011, 29.2: 65-71. (In Chinese)
Wei, Y., Ye, Y., Wu, K., Lai, X., 3D Numerical Modelling of Flow and Scour around Vertical Pipe. The Ocean Engineering, 2009, 27(4): 61-66. (In Chinese)
Wei, Y., and Ye, Y., 3D Numerical Modeling of Flow and Scour around Short Cylinder, Chinese Journal of Hydrodynamics, 2008: 23(6): 655-661. (In Chinese)

Refereed Proceedings
Wei, Y., Barradas Berglind, J. D. J., Muhammad Zaki Almuzakki, M., van Rooij, M., Wang, R., Jayawardhana, B., Vakis, A. I., A Fourier Approximation Method for the Multi-Pump Multi-Piston Power Take-Off System, In Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering, Madrid, Spain, June 2018 .
Wang, R., **Wei, Y**., van Rooij, M., Jayawardhana, B., Vakis, A. I., Influence of a Taut Cable on the Performance of a Point-Absorber Wave Energy Converter, In Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering, Madrid, Spain, June 2018.
Tay, Z. Y., **Wei, Y**., Vakis, A. I., Energy Extraction of Pontoon-Type Wave Energy Converter, In Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering, Madrid, Spain, June 2018.
Wei, Y., Barradas Berglind, J., van Rooij, M., Prins, W., Jayawardhana, B., Vakis, A, A frequency-domain model for a novel wave energy converter. In Proceedings of the 12th European Wave and Tidal Energy Conference, Cork, Ireland, August 2017.
Barradas-Berglind, J. J., Muñoz Arias, M., **Wei, Y.,** Prins, W. A., Vakis, A. I., & Jayawardhana, B.. Towards Ocean Grazer's modular power take-off system modeling: a port-hamiltonian approach. In Processing of 20th World Congress of the International Federation of Automatic Control (pp. 15663-15669). (IFAC- PapersOnLine; Vol. 50, No. 1), Toulouse, France, July 2017.
Barradas-Berglind, J. J., Muñoz Arias, M., **Wei, Y**., Prins, W., Vakis, A. I., & Jayawardhana, B., Energy-based modeling of the Ocean Grazer power take-off system. 121. In Processing of 36th Benelux Meeting on Systems and Control, Spa, Belgium, March 2017.
Wei. Y., Abadie, T., and Dias, F., A cost-effective method for modelling wave-OWSC interaction, In Proceedings of the 26th International Society of Offshore and Polar Engineering Conference, Rhodes, Greece, 658-664, June, 2016.
Wei. Y., and Dias, F., Numerical study of three dimensional effects of wave impact on an oscillating wave surge converter. In Proceedings of the 34th International Conference on Ocean, Offshore and Arctic Engineering, St. John's, Newfoundland, Canada, May 2015.
Wei. Y., Henry, A., Olivier, O., and Dias, F., Numerical study of wave slamming on an oscillating wave surge converter. In Proceedings of the 33rd International Conference on Ocean, Offshore and Arctic Engineering, San Francisco, USA, June 2014.
Henry, A., Kimmoun, O., Nicholson, J., Dupont, G., **Wei, Y**., and Dias, F., A two-dimensional experimental investigation of slamming of an oscillating wave surge converter. In Proceedings of the 24th International Offshore and Polar Engineering Conference, Busan, Korea, June 2014.

Wei. Y., Rafiee, A., and Dias, F., On the viscous effects in the interaction of water waves with an oscillating wave surge converter. In Proceedings of the 10th European Wave and Tidal Energy Conference, Aalborg, Denmark, September 2013.
Wei. Y., Rafiee, A., Elsaesser, B., and Dias, F., Numerical simulation of an oscillating wave surge converter. In Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering, Nantes, France, June 2013.

Book chapter
[1] **Wei. Y.,** Chapter 8: Local Scour and Protection of Marine Structures, In Ye Yin-can, Marine Geo-Hazards in China (1st Edition), Elsevier Science, 2017: 297-359.

(CO-)SUPERVISED THESES

Since 2022 Yongkang, Shi, PhD, Hydrodynamics of floating photovoltaics system.
Since 2019 Bechlenberg, A., PhD, Technological and financial analyses of the Ocean Grazer.
2019 Ajjaj, El, M., BSc, machine learning for wave energy converter array
2018 Bechlenberg, A., MSc, Performance Analysis of Floater Arrays in the Ocean Grazer 3.0 Design.
2018 Wang, R. PhD, Design and optimization of the Ocean Grazer platform.
2018 Zaharia, R.M., MSc, Understanding the single pump single piston system.
2017 Yu, Z., MSc, Frequency-domain hydrodynamic analysis of the floater blanket.
2017 Zwetsloot, R.J.M., MSc, Hydrodynamic analysis of the Ocean Grazer platform.
2017 Marti Manresa, G., MSc, ComFLOW simulations compared to wave tank experiments.
2017 Fernandez Vuelta., BSc, A. Modular modelling for the WEC's power take-off system.

WORKING EXPERIENCE RECORD

2022 Wind driven flow assessment for floating photovoltaic plants, HK, China.
2022 Numerical assessment of tsunami impact on SMP, Haiti.
2022 Development of North Sea metocean database, NL
2022 Numerical assessment of Black Sea tsunami on submarine pipeline, Turkey
2022 Metocean and hydrodynamics study of Celtic Sea floating wind farm, UK.
2021 Metocean and hydrodynamics study of Clogherhead wind farm, Ireland.
2021 Van Oord Pontoon Motion Study at Nigg Bay, UK.
2021 Metocean data extraction along 26 vessel route, GTT.
2021 Design current of Blyth offshore wind farm, Northumberland, UK.
2020 Investigation of a ship accident at Suez Canal using CFD model.
2020 R&D project: downtimes computation using deep neural network.
2020 Metocean and mooring analysis study for Lekki port in Nigeria.
2020 Metocean and mooring analysis study for Chancay terminal in Peru.
2020 Global metocean hindcast of major LNG shipping routes, GTT.
2020 Metocean time series near Hadera, Israel.
2019 R&D project: development of CFD tool for wind flow over complex terrain.
2019 Mooring analysis study of the terminal at Guangzhou, China.
2012 Task leader in morphodynamical study of a cross-sea bridge at Daishan.
2012 Task leader in bathymetry survey of a cross-sea bridge at Daishan.
2011 Task leader in bathymetry survey of a thermal power plant at Zhoushan.
2011 Bathymetry and geophysical survey of gas pipeline routing at Wenzhou.
2011 General survey of the islands in Zhejiang province.
2010 Fuzhou (Funjian)-Danshui (Taiwan) submarine cable routing survey.
2010 Bathymetry and geophysical survey of water supply pipeline at Daishan.
2010 Bathymetry and geophysical survey of offshore wind farm at Xiangshui.
2009 Bathymetry survey of Hangzhouwan Bay.
2009 Numerical study of flow and sediment transport of submerged vanes.
2008 Asia-Pacific cable network routing survey
2007 China-US cable network II routing survey.