XUEPENG FU

Room B708, Mulan Building, NAOCE, Shanghai Jiao Tong University, Shanghai, CN
isfuxp@sjtu.edu.cn ◇ Google Scholor ◇ Homepage ◇ Research Gate

RESEARCH INTERESTS

Fluid-Structure Interaction, Vortex-Induced Vibration, Turbulence Model, Machine Learning, Computational Fluid Dynamics

EDUCATION

Shanghai Jiao Tong University Aug. 2018 - Present (Expected Dec.)
Ph.D. in Ocean Engineering (Advisor: Shixiao Fu) *Shanghai, China*

Ocean University of China Sept. 2014 – Jul. 2018
B.Eng. in Ocean Engineering (Advisor: Weiping Huang, Top 1% thesis award) *Qingdao, China*

PEER-REVIEWED JOURNALS

1. **Fu, X.**, Fu, S.*, Ren, H., Xie, W., Xu, Y., Zhang, M., Liu, Z., & Meng, S. (2022). Experimental investigation of vortex-induced vibration of a flexible pipe in bidirectionally sheared flow. *Journal of Fluids and Structures*, 114, 103722.
2. **Fu, X.**, Fu, S.*, Zhang, M., Han, Z., Ren, H., Xu, Y., & Zhao, B. (2022). Frequency capture phenomenon in tandem cylinders with different diameters undergoing flow-induced vibration. *Physics of Fluids*, 34(8), 085120.
3. **Fu, X.**, Zhang, M.*, Fu, S., Zhao, B., Ren, H., & Xu, Y. (2022). On the study of vortex-induced vibration of a straked pipe in bidirectionally sheared flow. *Ocean Engineering*, 266, 112945.
4. **Fu, X.**, Fu, S.*, Han, Z., Zhao, B., Niu, Z., Zhang, M., & Zhao, B. (2023). Numerical simulations of 2-DOF vortex-induced vibration of a circular cylinder in two and three dimensions: a comparison study. *Journal of Ocean Engineering and Science*.
5. **Fu, X.**, Fu, S.*, Liu, C., Zhang, M. Data-driven approach for modeling Reynolds stress tensor with invariance preservation. (arXiv: 2303.17178, Submitted to *Computers & Fluids*, Revision)
6. **Fu, X.**, Fu, S.*, Zhao, B., Ren, H., Zhang, M., Xu, Y. Vortex-induced vibration of flexible pipe under oscillatory sheared flow. (Submitted to *Physical Review Fluids*, Revision)
7. Song, H., Huang, W.*, **Fu, X.**, Yan, H., & Chang, S. (2021). Empirical model of the wake-induced lift force on a cylinder with low mass ratio. *Marine Structures*, 80, 103081.
8. Yang, Z., Xu, Y.*, Jing, J., **Fu, X.**, Wang, B., Ren, H., Zhang, M, & Sun, T. (2023). Investigation of physics-informed neural networks to reconstruct a flow field with high resolution. *Journal of Marine Science and Engineering*, 11(11): 2045.
9. Zhao, B., Zhang, M.*, Fu, S., **Fu, X.**, Ren, H., & Xu, Y. (2023). Drag coefficients of double unequal-diameter flexible cylinders in tandem undergoing vortex/wake-induced vibrations. *Ocean Engineering*, 270, 113642.
10. Zhao, B., Zhang, M.*, Fu, S., **Fu, X.**, Sun, T., Song, B. (2023). Experimental investigation on vortex/wake-induced force of double unequal-diameter cylinders in tandem. *Physics of Fluids*, 35 (5), 055134.
11. Ren, H., Zhang, M.*, Wang, Y., Xu, Y., Fu, S., **Fu, X.**, & Zhao, B. (2020). Drag and added mass coefficients of a flexible pipe undergoing vortex-induced vibration in an oscillatory flow. *Ocean Engineering*, 210, 107541.

12. Ren, H., Fu, S.*, Zhao, B., Zhang, M., Xu, Y., Shen, J., **Fu, X.** & Huang, J. (2022). Hydrodynamic force model for flexible pipe based on energy competition and applications into flow induced vibration prediction in uniform flow. *Marine Structures*, 86, 103291.

CONFERENCE PROCEEDINGS

1. **Fu, X.**, Xu, Y. *, Zhang, M., Ren, H., Zhao, B., & Fu, S. (2020). Numerical simulation of vortex-induced vibration of two tandem cylinders with different diameters under uniform Flow. In *International Conference on Offshore Mechanics and Arctic Engineering*, 84409, V008T08A034a.
2. Zhao, B, Zhang, M*, Xu, Y, Ren, H., **Fu, X.**, Fu, S., Li, C. (2020). Experimental study on interference response characteristics of triple flexible risers under uniform flow. In *International Ocean and Polar Engineering Conference*.

ACADEMIC TALKS

76th Annual Meeting of the Division of Fluid Dynamics *Washington, USA*

Title: Vortex-induced vibration of a flexible cylinder under bidirectionally sheared flow Nov. 2023

Academic Conference of Chinese Society of Naval Architects in 2021 *Kunming, China*

Title: Experimental investigation of vortex-induced vibration of a flexible pipe with helical strakes in oscillatory flow (Outstanding Paper, Top 5%) Oct. 2021

39th International Conference on Offshore Mechanics and Arctic Engineering *Virtual*

Title: Numerical simulation of vortex-induced vibration of two tandem cylinders with different diameters under uniform flow Aug. 2020

GRANT WRITING EXPERIENCES

1. Title: Flow Induced Force and its Effects on Risers and Subsea Structures (FIFERS)
   Funding Agency: JIP (Statoil, DNV, CNOOC, et al.) Award Amount: $ 300,000
   Proposed Dates: Jul. 2020 - Jul. 2024 PIs: Shixiao Fu (SJTU)
   Role: Preparation of the proposal (25%), Annual presentation slides (80%)
2. Title: Solution Strategy for Fluid-Structure Interaction (In Chinese)
   Funding Agency: STCSM Award Amount: $ 500,000
   Proposed Dates: Oct. 2019 - Oct. 2022 PIs: Shixiao Fu (SJTU), Quan Zhou (SHU)
   Role: Preparation of the proposal (80%)

   Also participated in grant writing for NSF-China, MST, MIIT, et al.

HONORS & AWARDS

Weichai Power Scholarship (5/ Ph.D. in NAOCE of SJTU) *2022*
Outstanding Undergraduate Graduates in Ocean University of China *2018*
Top 1% Bachelor Thesis in Ocean University of China *2018*
First Prize of the 6th China Student Ocean Engineering Design Competition (The 1st place) *2016*

REFERENCES

1. Name: Prof. Shixiao Fu (SJTU, NTNU)
   Title: Distinguished professor at SJTU, Adjunct professor at NTNU, Member of the Norwegian Academy of Technological Sciences
   Relationship: Ph.D. advisor
   Email: shixiao.fu@sjtu.edu.cn

2. Name: Prof. Zhaolong Han (SJTU)
   Title: Professor in ocean engineering at SJTU
   Relationship: Collaborator
   Email: han.arkey@sjtu.edu.cn

3. Name: Prof. Weiping Huang (OUC)
   Title: Emeritus professor in ocean engineering at OUC
   Relationship: Undergraduate advisor
   Email: wphuang@ouc.edu.cn