

刘海笑 教授 的个人资料

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主要研究方向：

- 1、新型深水系泊技术；
- 2、新型深水锚固结构；
- 3、嵌入式海洋工程结构；
- 4、大型集成式浮式结构物；
- 5、海上浮式风机平台；
- 6、海洋土复杂循环动力特性；
- 7、海洋岩土工程；
- 8、合成纤维系缆复杂力学性能；
- 9、海底管道沙粒侵蚀分析；
- 10、海洋矿藏资源开采技术。

主要学历：

1995.03—1998.06：清华大学水利水电工程系水工结构工程专业博士生；
1992.09—1995.03：天津大学力学系实验力学专业硕士生；
1985.09—1989.06：中山大学力学系应用力学专业本科生。

主要学术经历：

2006.01—现在：天津大学岩土工程专业博士生导师；
2005.01—现在：天津大学港口、海岸及近海工程专业博士生导师；
2003.06—现在：天津大学建筑工程学院教授；
2010.08—2011.02：澳大利亚西澳大学（UWA）COFS高级研究学者；
2003.08—2004.08：英国牛津大学（University of Oxford）工程科学系访问学者；
2000.03—2003.06：天津大学建筑工程学院副教授；
1998.06—2000.03：天津大学水利工程学科博士后流动站（港口、海岸及近海工程方向）博士后。

主要讲授课程：

- 1、弹塑性力学（研究生）；
- 2、弹性力学及有限元法（本科生）；
- 3、计算机工程仿真分析方法（研究生）；
- 4、计算机辅助工程（CAE）软件（研究生）。

主要学术兼职：

《海洋工程》编委；

《Ocean Systems Engineering》(韩国)、《Journal of Shipping and Ocean Engineering》(美国)、《American Journal of Engineering and Applied Sciences》(美国)、《Current Development in Oceanography》(印度)编委。

主要学术成就、奖励及荣誉：

- 1、“复杂地基介质-结构系统波动与动力问题的研究”成果获2006年天津市自然科学三等奖(第1完成人)；
- 2、入选2006年教育部“新世纪优秀人才支持计划”。

主要科研项目及角色：

- [1] 深海锚固结构在海床中的嵌入机理、破坏模式和动力行为—国家自然科学基金重点项目，2016年至2020年，负责人；
- [2] 深水锚在海床土中复杂动力行为的理论与数值模拟研究—天津市应用基础与前沿技术研究计划(重点项目)，2014年至2017年，负责人；
- [3] 海底管道沙粒侵蚀的机理、特性及分析模型—国家自然科学基金资助项目，2013年至2016年，负责人；
- [4] 深水绷紧式系泊系统非线性循环动力特性及响应—国家自然科学基金资助项目，2012年至2015年，负责人；
- [5] 拖曳缆绳在海床土中的反悬链特性—国家自然科学基金资助项目，2010年至2012年，负责人；
- [6] 深海系泊系统性能与动力特性—国家自然科学基金重点项目，2007年至2010年，负责人；
- [7] 适用于深海油气开发平台的新型系泊技术—国家高技术研究发展计划(863计划)课题，2007年至2009年，负责人；
- [8] 波浪作用下结构海床系统的失稳破坏机理及数值仿真安全评估—国家自然科学基金资助项目，2004年至2006年，负责人；
- [9] 随机波作用下大直径圆柱壳结构的非线性动力响应及仿真—国家自然科学基金资助项目，2000年至2002年，负责人；
- [10] 层状与各向异性介质波动问题的理论与实验研究—国家自然科学基金资助项目，第2完成人，1996年至2000年；
- [11] 港口工程结构在随机波作用下的动力响应研究—中国博士后科学基金资助项目，1998年至2000年，负责人。

代表性论文 / 论著及检索情况：

国际期刊、国际会议发表论文

- [1] Kang R, Liu HX. A unified explicit correlation of predicting the sand erosion in elbows for gas and annular flows based on probability analysis. *Wear*, 2019, 428-429: 279-292.
- [2] Liu HX, Peng JS, Liang K, Xiao Z. The behavior of anchor lines embedded in layered soils. *Ocean Engineering*, 2019, 190: 106424.
- [3] Liu MY, Liu HX. A mechanistic model of liquid film movements in pipe elbows for annular flow. *Journal of Heat Transfer-Transactions of the ASME*, 2019, 141(6), 062002.
- [4] Kang R, Liu HX. A probability model of predicting the sand erosion in elbows for annular flow. *Wear*, 2019, 422-423: 167-179.
- [5] Kang R, Liu HX. A mechanistic model of predicting solid particle erosion on the symmetry plane of elbows for annular flow. *Journal of Energy Resources Technology-Transactions of the ASME*, 2019, 141, 032907.
- [6] Peng JS, Liu HX. Analytical study on comprehensive behaviors of drag anchors in the seabed. *Applied Ocean Research*, 2019, 90: 101855.
- [7] Peng JS, Liu HX, Zhao YB, Liang K. Failure mode and pullout capacity of anchor piles in soils with cohesive and cohesionless properties. *Marine Georesources & Geotechnology*, 2019, DOI: 10.1080/1064119X.2019.1649332.
- [8] Lian YS, Liu HX, Yim SC, Zheng JH, Xu PF. An investigation on internal damping behavior of fiber rope. *Ocean Engineering*, 2019, 182: 512-526.
- [9] Zhang R, Liu HX, Dong S. Approximate theoretical solution of the movement and erosion of solid particles in a 90° bend. *Wear*, 2019, 430-431: 233-244.
- [10] Lian YS, Yim SC, Zheng JH, Liu HX, Zhang N. Effects of damaged fiber ropes on the performance of a hybrid taut-wire mooring system. *Journal of Offshore Mechanics and Arctic Engineering-Transactions of the ASME*, 2019, DOI: 10.1115/1.4044723.
- [11] Sun J, Liu HX. CFD analysis on hydrodynamic characteristics for optimizing torpedo anchors. *Proceedings of the 38th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2019)*, Scotland, UK, 2019.
- [12] Gao JC, Liu HX. CFD analysis on similarity criteria of hydrodynamic characteristics for gravity-installed anchors. *Proceedings of the 38th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2019)*, Scotland, UK, 2019.
- [13] Liu HX, Yang WX, Kang R. A correlation for sand erosion prediction in annular flow considering the effect of liquid dynamic viscosity. *Wear*, 2018, 404-405: 1-11.

- [14] Lian YS, Liu HX, Li LA, Zhang YM. An experimental investigation on the bedding-in behavior of synthetic fiber ropes. *Ocean Engineering*, 2018, 160: 368-381.
- [15] Liu HX, Xiong J, Zhao YB. Three-dimensional behavior of embedded anchor lines under out-of-plane loading. *Applied Ocean Research*, 2018, 79: 134-148.
- [16] Zhao YB, Liu HX. Key techniques in simulating comprehensive anchor behaviors by large deformation finite element analysis. *Journal of Offshore Mechanics and Arctic Engineering*, 2018, 140(1), 012001.
- [17] Liu HX, Li Z, Zhang YM. Offshore geotechnical problems in deepwater mooring techniques for large floating structures. *American Journal of Engineering and Applied Sciences*, 2018, 11(2): 598-610.
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- [20] Zhang YM, Liu HX. Impact of connection properties on dynamic response of modular floating structures. *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2018)*, Madrid, Spain, 2018.
- [21] Zhao YB, Liu HX. Performance of embedded mooring lines during keying and diving of gravity installed anchors. *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2018)*, Madrid, Spain, 2018.
- [22] Zhao YB, Liu HX. Toward a quick evaluation of the performance of gravity installed anchors in clay: penetration and keying. *Applied Ocean Research*, 2017, 69: 148-159.
- [23] Lian YS, Liu HX, Zhang YM, Li LA. An experimental investigation on fatigue behaviors of HMPE ropes. *Ocean Engineering*, 2017, 139: 237-249.
- [24] Zhang R, Liu HX, Dong S, Liu MY. A probability model for fully developed annular flow in vertical pipes: Film thickness, interfacial shear stress and droplet size distribution. *Journal of Heat Transfer-Transactions of the ASME*, 2017, 139(3), 032001.
- [25] Zhao YB, Liu HX, Liu MY. Failure mode and pullout capacity of anchor piles in clay. *American Journal of Engineering and Applied Sciences*, 2017, 10(3): 769-780.
- [26] Kang R, Liu HX, Liu MY. A two-dimensional model of predicting sand erosion in elbows for liquid flow. *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2017)*, Trondheim, Norway, 2017.
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- [37] Huang W, Liu HX, Lian YS, Li LA. Modeling nonlinear time-dependent behaviors of synthetic fiber ropes under cyclic loading. *Ocean Engineering*, 2015, 109: 207-216.

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- [39] Liu HX, Lian YS, Li LA, Zhang YM. Experimental investigation on dynamic stiffness of damaged synthetic fiber ropes for deepwater moorings. *Journal of Offshore Mechanics and Arctic Engineering*, 2015, 137 (6), 061401.
- [40] Lian YS, Liu HX, Huang W, Li LA. A creep-rupture model of synthetic fiber ropes for deepwater moorings based on thermodynamics. *Applied Ocean Research*, 2015, 52: 234-244.
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- [61] Liu HX, Wang C, Zhao YB. Analytical study of the failure mode and pullout capacity of suction anchors in clay. *Ocean Systems Engineering*, 2013, 3(2): 79-95.
- [62] Zhao YB, Liu HX. Large deformation finite element analysis of the anchor line embedded in seabed soils. *Proceedings of the 32nd*

International Conference on Ocean, Offshore and Arctic Engineering, Nantes, France, 2013.

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