

CURRICULUM VITAE OF FUPING GAO

(Updated: March 22, 2014)

Professor Fuping Gao (F. P. Gao)

Key Laboratory for Mechanics in Fluid Solid Coupling Systems (LMFS)

Director, Division of Frontier Sciences

Institute of Mechanics, Chinese Academy of Sciences

No.15 Beisihuanxi Road, Beijing 100190

P.R. China

Tel: 86-10-82544189 Fax: 86-10-62561284

Email: fpgao@imech.ac.cn

<http://faculty.imech.ac.cn/fpgao>

PROFESSIONAL EXPERIENCE

- 2009 – now: *Professor, **Institute of Mechanics, Chinese Academy of Sciences (CAS)***
- 2003 – 2009: *Associate Professor, **Institute of Mechanics, CAS***
- 2003 – 2003: *Assistant Professor, **Institute of Mechanics, CAS***
- 2001 – 2002: *Post-Doctoral Research Fellow, Center for Offshore Foundation Systems, **University of Western Australia**; School of Engineering, **Griffith University**, Australia*
- 2000 – 2000: *Visiting Scholar, Department of Civil Engineering, **Hong Kong University of Science and Technology***

QUALIFICATIONS

- Ph.D. 2001: *Engineering Mechanics (Ocean Engineering), **Institute of Mechanics, CAS***
- Master Eng. 1997: *Geotechnical Engineering, **Beijing Jiaotong University**, China*
- Bachelor Eng. 1994: *Mining Engineering, **Wuhan University of Science and Technology**, China*

RESEARCH INTERESTS

- ✧ Wave/current-structure-soil Interaction
- ✧ Offshore geomechanics
- ✧ Stability analysis of offshore pipeline and riser system
- ✧ Soil erosion & scour around marine structures
- ✧ Wave modelling in Geo-centrifuges and its application

PROFESSIONAL SERVICES AND MEMBERSHIPS

- ✧ Member of Editorial Board (Associate Editor), ***Ocean Engineering*** (Elsevier) [2013-now]

- ✧ Member of Editorial Board, *Applied Mathematics and Mechanics* (Chinese Version) [2013-now]
- ✧ Member of Editorial Board, *Chinese Journal of Geotechnical Engineering* [2012-now]
- ✧ TPC Member, *International Society for Offshore and Polar Engineering (ISOPE)* [2011-now]
- ✧ Member, *American Society of Civil Engineers (ASCE)* [2009-now]
- ✧ Member of Seventh-Term Scientific Committee, *Association of Offshore Engineering of China* [2008-now]
- ✧ Member of Editorial Board, *The Open Journal of Ocean Engineering* (Bentham Science) [2008-now]
- ✧ Member of International Scientific Committee, *4th International Conference on Scour and Erosion* [2008]
- ✧ Member of Editorial Board, *Journal of Hydrodynamics* (Elsevier) [2008-now]
- ✧ Vice Chair, Technical Committee of 213: Geotechnics of Soil Erosion, *International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)* [2007-now]
- ✧ Member, *International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)* [2003-now]
- ✧ **Session Chair/ Co-Chair for International Conferences:** ISOPE-2006 (San Francisco, USA); The Seventh ISOPE Pacific/Asia Offshore Mechanics Symposium (Dalian, CHINA, 2006); 4th International Conference on Scour and Erosion (Tokyo, JAPAN, 2008); ISOPE-2010 (Beijing, CHINA); OMAE-2010 (Shanghai, CHINA); ISOPE-2012 (Rhodes, GREECE); ISOPE-2013 (Anchorage, Alaska, USA)

SELECTED PUBLICATIONS

(A) JOURNAL PAPERS

1. Qi, W.G. and Gao, F.P. (2014): Physical modeling of local scour development around a large-diameter monopile in combined waves and current. *Coastal Engineering*, 2014, 83: 72-81. (SCI/EI)
2. Gao, F.P. , Wang, N., Zhao, B. (2013): Ultimate bearing capacity of a pipeline on clayey soils: Slip-line field solution and FEM simulation. *Ocean Engineering*, 2013, 73: 159-167. (SCI/EI)
3. Zang, Z.P., Gao, F.P., Cui, J.S. (2013): Physical modeling and swirling strength analysis of vortex shedding from near-bed piggyback pipelines. *Applied Ocean Research*, 2013, 40: 50-59. (SCI/EI)
4. Zhang, Y., Jeng, D.-S., Gao, F.P., Zhang, J.-S. (2013): An analytical solution for response of a porous seabed to combined wave and current loading. *Ocean Engineering*, 2013, 57: 240-247. (SCI/EI)
5. Gao, F.P. & Zhao, B. (2012): Slip-line field solution for ultimate bearing capacity of a pipeline

on clayey soils. *Theoretical & Applied Mechanics Letters*, 2012, 2: 051004.

6. Gao, F.P., Han, X.T., Cao, J., Sha, Y., Cui, J.S. (2012): Submarine pipeline lateral instability on a sloping sandy seabed. *Ocean Engineering*, 2012, 50: 44–52. (SCI/EI)
7. Gao, F.P., Han, X.T., Yan, S.M. (2012): A numerical model for ultimate soil resistance to an untrenched pipeline under ocean currents. *China Ocean Engineering*, 2012, 26(2): 185–194. (SCI/EI)
8. Gao, F.P., Yan, S.M., Yang, B., Luo, C.C. (2011): Steady flow-induced instability of a partially embedded pipeline: Pipe-soil interaction mechanism. *Ocean Engineering*, 2011, 38: 934–942. (SCI/EI)
9. Li, X.J., Gao, F.P., Yang, B., Zang, J. (2011): Wave-induced pore pressure responses and soil liquefaction around pile foundation. *International Journal of Offshore and Polar Engineering*, 2011, 21(3): 233–239. (SCI/EI)
10. Hong Y.S., Federico M. M., Gao, F.P. (2010): ISAB-2010 Foreword. *Procedia Engineering*, 2010, 4:1-2. (EI)
11. Gao, F.P., Yan, W.J., Ge F. (2010): Geotechnical investigation and tension-pile solution for foundation of SFT prototype at Qiandao Lake. *Procedia Engineering*, 2010, 4:127-134. (EI)
12. Yan, W.J. & Gao, F.P. (2010): Numerical analysis of interfacial shear degradation effects on axial uplift bearing capacity of a tension pile. *Procedia Engineering*, 2010, 4: 273-281. (EI)
13. Gao, F.P. & Luo, C.C. (2010): Flow-Pipe-Seepage Coupling Analysis on Spanning Initiation of a Partially-Embedded Pipeline. *Journal of Hydrodynamics*, 2010, 22(4): 478-487. (SCI)
14. Zhao, C.G., Liu, Y., Gao F.P. (2010): Work and energy equations and the principle of generalized effective stress for unsaturated soils. *International Journal for Numerical and Analytical Method in Geomechanics*, 2010; 34: 920–936. (SCI, EI)
15. Jeng, D.S., Zhou, X.L., Luo, X.D., Wang, J.H., Zhang, J. and Gao, F. P. (2010): Response of Porous Seabed to Dynamic Loadings. *Geotechnical Engineering Journal, SEAGS & AGSSEA*, 41(4).
16. Yang, B., Gao, F. P., Jeng, D.S., Wu, Y. X. (2009): Experimental study of vortex-induced vibrations of a cylinder near a rigid plane boundary in steady flow. *Acta Mechanica Sinica*, 25: 51-63. (SCI, EI)
17. Yang, B., Gao, F. P., Li, D.H., Wu, Y. X. (2009): Physical Modelling and Parametric Study on Two-Degree-of-Freedom VIV of a Cylinder near Rigid Wall. *China Ocean Engineering*, 23(1): 119-132. (SCI, EI)
18. Yang, B., Jeng, D.S., Gao, F. P., Wu, Y. X. (2008). Forces Acting on the Seabed around A Pipeline in Unidirectional Ocean Currents. *The Open Civil Engineering Journal*, 2:148-155.
19. Yang, B., Gao, F. P., Wu, Y. X. (2008): Flow-induced Vibrations of a Cylinder with Two Degrees of Freedom near Rigid Plane Boundary. *International Journal of Offshore and Polar Engineering*, 18 (4): 302-307. (SCI, EI)
20. Yang, B., Gao, F. P., Jeng, D.S., Wu, Y. X. (2008): Experimental study of vortex-induced vibrations of a pipeline near an erodible sandy seabed. *Ocean Engineering*, 35: 301-309. (SCI, EI)

21. Gao, F. P., Yan, S.M., Yang, B., Wu, Y. X. (2007): Ocean currents-induced pipeline lateral stability. *Journal of Engineering Mechanics, ASCE*, 133(10): 1086-1092. (SCI, EI)
22. Jeng, D.S., Seymour, B., Gao, F.P., Wu, Y.X. (2007): Ocean waves propagating over a porous seabed: residual and oscillatory mechanisms. *Science in China, Series E Technological Sciences*, 50(1): 81-89. (SCI, EI)
23. Gao, F. P., Yang, B., Wu, Y. X., Yan, S.M. (2006): Steady currents induced seabed scour around a vibrating pipeline. *Applied Ocean Research*, 28: 291-298. (SCI, EI)
24. Gao, F. P., Jeng, D. S., Wu, Y. X. (2006): An Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed. *Journal of Transportation Engineering, ASCE*, 132(7): 590-596 (SCI, EI)
25. Zhao, C.G., Dong, J., Gao, F.P. (2006). An Analytical Solution for Three-Dimensional Diffraction of Plane P-Waves by a Hemispherical Alluvial Valley with Saturated Soil Deposits. *Acta Mechanica Sinica*, 19(2):141-151 (SCI, EI)
26. Yang, B., Gao, F. P., Wu, Y.X., Li, D.H. (2006): Experimental Study on Vortex-Induced Vibrations of Submarine Pipeline Near Seabed Boundary in Ocean Currents. *China Ocean Engineering*, 2006, 20(1):113-121 (SCI, EI)
27. Zhao, C.G., Dong, J., Gao, F.P., Jeng, D.S. (2006): Seismic responses of a hemispherical alluvial valley subjected to SV waves: A three-dimensional analytical approximation. *Acta Mechanica Sinica*, 22(6): 547-557. (SCI, EI)
28. Gao, F. P., Wu, Y. X. (2006): Non-linear wave induced transient response of soil around a trenched pipeline, *Ocean Engineering*, 33: 311-330 (SCI, EI)
29. Yang, B., Gao, F.P., Wu, Y.X. (2006): Dimensional Analysis and Experimental Apparatus on Interaction between Ocean Current-Pipeline and Seabed, *Journal of Ship Mechanics*, 10(3): 130-141 (EI)
30. Zhao C.G., Yang Z.M., Gao F.P. and Zhang Y.N. (2005). Influential Factors of Loess Liquefaction and Pore Pressure Development. *Acta Mechanica Sinica*, 21(2): 129-132. (SCI, EI)
31. Gao, F. P., Jeng, D. S. and Sekiguchi, H. (2003): Numerical Study on the Interaction between Non-Linear Wave, Buried Pipeline and Non-Homogenous Porous Seabed. *Computers and Geotechnics*, 30: 535-547 (SCI, EI)
32. Gao, F. P., Gu, X. Y. and Jeng, D. S. (2003) : Physical Modeling of Untrenched Submarine Pipeline Instability. *Ocean Engineering*, 30 (10): 1283-1304. (SCI, EI)
33. Gao, F. P., Gu, X. Y., Jeng, D. S. and Teo H.T. (2002): An Experimental Study for Wave-Induced Instability of Pipelines: The Breakout of Pipelines. *Applied Ocean Research*, 24: 83-90. (SCI, EI)
34. Jeng, D. S., Gao, F. P. and Sekiguchi, H. (2002): Effects of Wave Non-Linearity on the Wave-Induced Responses of Soil and Buried Pipeline: Application of GFEM-WSSI. *Journal of Engineering*, 13(2): 77-90
35. Gu, X.Y., Gao, F.P. and Pu, Q. (2001): Wave-Soil-Pipe Coupling Effect upon Submarine Pipeline On-Bottom Stability. *Acta Mechanica Sinica*, 17(1): 86-96 (SCI, EI)
36. Pu, Q., Li, K., Gao F.P. (2001): Scour of the Seabed under a Pipeline in Oscillating Flow. *China Ocean Engineering*, 15(1) : 129-137. (SCI, EI)

(B) CONFERENCE PAPERS

37. Qi, W.G., Gao, F.P. (2014): Responses of sandy seabed under combined waves and current: Turbulent boundary layer and pore-water pressure. *Proceedings of the 8th International Conference on Physical Modelling in Geotechnics 2014 (ICPMG 2014)*, Perth, Australia, 14-17

January 2014. pp. 561-567.

38. Qi, W.G., Tian, J. K., Zheng H.Y., Wang, H.Y., Yang, J., He, G. L., Gao, F.P. (2014): Bearing capacity of the high-rise pile cap foundation for offshore wind turbines. *Proceeding of International Conference on Sustainable Development of Critical Infrastructure (IC-SDCI 2014)*, Shanghai, China, May 16-18, 2014.
39. Han, X.T., Gao, F.P. (2013): A Pipe-soil interaction model for anti-rolling pipeline on-bottom stability on a sloping sandy seabed. *The Proceedings of the 23rd International Offshore and Polar Engineering Conference (ISOPE)*, 2013. pp. 210-215. (EI, ISTP)
40. Zang, Z.P., Gao, F.P., Mou, Y.C., Li, Z.B. (2013): Transverse VIV response of piggyback pipelines with various configurations in ocean current. *The Proceedings of the 23rd International Offshore and Polar Engineering Conference (ISOPE)*, 2013. pp. 448-453. (EI, ISTP)
41. Qi, W.G., Gao, F.P., Han, X.T., Gong, Q.X. (2012): Local scour and pore-water pressure around a monopile foundation under combined waves and currents. *The Proceedings of the 22nd International Offshore and Polar Engineering Conference (ISOPE)*, 2012, pp. 159-165. (EI, ISTP)
42. Zang, Z.P., Gao, F.P., Cui, J.S. (2012): Vortex Shedding and Vortex-Induced Vibration of Piggyback Pipelines in Steady Currents. *The Proceedings of the 22nd International Offshore and Polar Engineering Conference (ISOPE)*, 2012. pp. 565-571. (EI, ISTP)
43. Gao F.P., Cao J., Han X.T., Sha Y., Zhang E.Y., Wu Y.X., Cui J.S. (2011): Full-Scale Physical Modeling of Pipeline Instability on a Sloping Seabed. *Proceedings of Annual Offshore Technology Conference (OTC 2011)*, Paper No. OTC-21260, 2-5 May 2011, Houston, Texas, USA. pp.474-480.
44. Cui, J.S., Gao, F.P., Zang, Z.P., Han, X.T. (2011): Vortex Shedding Suppression of Cylindrical Structures Near Plane Wall. *The 5th Cross-strait Conference on Structural and Geotechnical Engineering (SGE-5)*, Hong Kong, China, 13-15 July 2011. pp. 938-945.
45. Zang Z.P., Cheng, L., Gao, F.P. (2011): Application of ROMS for simulation evolution and migration of tidal sand waves. *Proceedings of the Sixth International Conference on Asian and Pacific Coasts (APAC 2011)*, 2011, Hong Kong, China.
46. Gao, F.P., Yan, S.M., Zhang, E.Y., Wu, Y.X., Jia, X. (2010): Lateral soil resistance to an untrenched pipeline under the action of ocean currents. *Proceedings of the Second International Symposium on Frontiers in Offshore Geotechnics (ISFOG-2)*. University of Western Australia, Perth, Australia, 2010, 797-802. (Invited Presentation)
47. Li, X.J., Yang, B., Gao, F.P., Zang, J. (2010): A FEM Model for Wave-Induced Pore Pressure Response around a Pile Foundation. *The Proceedings of the 20th International Offshore and Polar Engineering Conference (ISOPE)*, 2010. pp. 674-679. (EI, ISTP)
48. Yan, S.M., Gao, F.P., Cao, J., Zhang, E.Y. , Li, G.H., Wu, Y.X. (2010): Physical Modeling of Untrenched Pipeline Breakout From Sand-Bed in Ocean Currents. *Proceedings of the 29th International Conference on Ocean, Offshore and Arctic Engineering (OMAE)*, Paper No. OMAE2010-20183. (EI, ISTP)

49. Zhao, B., Gao, F.P., Kang, R.Y. (2010): Numerical Investigation on Bearing Capacity of a Pipeline on Clayey Soils. *Proceedings of the 29th International Conference on Ocean, Offshore and Arctic Engineering (OMAE)*, Paper No. OMAE2010-20200. (EI, ISTP)
50. Zhao, B., Gao, F. P., Liu, J.M., Wu, Y.X. (2009): Vertical Bearing Capacity of a Partially-Embedded Pipeline on Tresca Soils. *The Proceedings of the 19th International Offshore and Polar Engineering Conference (ISOPE)*, Osaka, Japan, 2009, 469-473. (EI, ISTP)
51. Luo, C. C. and Gao, F. P. (2008): Numerical Investigation on the Onset of Tunnel Erosion Underneath a Submarine Pipeline in Currents. *Proceeding of Fourth International Conference on Scour and Erosion*, Tokyo, Japan, 2008, 214-219.
52. Yang, B., Gao, F. P., Wu, Y.X. (2008): Experimental Study on Flow Induced Vibration of a Cylinder with Two Degrees of Freedom Near a Rigid Wall. *The Proceedings of the 18th International Offshore and Polar Engineering Conference (ISOPE)*, Vancouver, BC, Canada, 2008, 469-474.
53. Gao, F. P. & Randolph, M. F. (2007): Wave Generation System in a Drum Centrifuge and Its Application. *The Proceedings of 10th China National Conference on Soil Mechanics and Geotechnical Engineering*, November 1-4, 2007, Chongqing, China. Vol 1: 274-280.
54. Gao, F. P., Yang, B., Yan, S.M., Wu, Y.X. (2007): Occurrence of Spanning of a Submarine Pipeline with Initial Embedment *The Proceedings of the 17th International Offshore and Polar Engineering Conference (ISOPE)*, Lisbon, Portugal, 2007, 887-891.
55. Gao, F. P., Yang, B., Yan, S.M., Wu, Y.X. (2006): Physical Modeling of Current-Induced Seabed Scour around a Vibrating Submarine Pipeline, *The Proceedings of the 16th International Offshore and Polar Engineering Conference (ISOPE)*, San Francisco USA, 2006, 108-112.
56. Wu, Y.X., Zheng, Z.C, Gao, F.P. Li, Q.P. (2006): Study on the Performance of a Compact Compound Oil/Gas/Water Separator for Offshore Oil Industry *The Proceedings of the 16th International Offshore and Polar Engineering Conference (ISOPE)*, San Francisco USA, 2006, 225-229.
57. Gao, F.P., Yan, S.M., Yang, B., Li, Q., Wu, Y.X. (2006): Experimental Study of Submarine Pipeline Stability on Sandy Seabed under the Influence of Ocean Currents, *The 7th Pacific/Asia Offshore Mechanics Symposium---ISOPE PACOMS-2006*, Dalian, China, September 17-20, 2006, 152-156.
58. Gao, F. P. & Randolph, M. F. (2005): Progressive Ocean Wave Modeling in Drum Centrifuge. In: *Frontiers in Offshore Geotechnics*, Taylor & Francis Group plc, London, UK.
59. Gao, F.P., Wu Y.X. Jeng, D.S., Jia, X. (2005): Wave-Induced Pipeline On-bottom Stability: Comparisons between Pipe-Soil and Wave-Pipe-Soil Interaction Mode. *The Proceedings of the 15th International Offshore and Polar Engineering Conference (ISOPE)*, Seoul, Korea, 2005 , Vol. (2): 109-114.
60. Gao, F.P., Wu Y.X. Jeng, D.S. (2004): The Effects of Backfill Soil Properties on Wave-induced Seepage Force upon Trenched Pipeline. *The Proceedings of the 14th International Offshore and Polar Engineering Conference*, 2004, Toulon, France, Vol. (2): 44-49.
61. Wu, Y.X., Yang H.P., Pu Q., Li K. and Gao F.P. (2004): Oscillatory flow Induced Hydrodynamic Forces upon a Pipeline near Erosive Sandy Seabed. *The Proceedings of the 14th International Offshore and Polar Engineering Conference (ISOPE)*, 2004, Toulon, France, Vol. (2): 56-61.
62. Gu, X.Y., Gao, F.P. and Pu, Q. (2001): Wave-Induced Breakout of Untrenched submarine Pipes on Sand. *The Fifteenth International Conference on Soil Mechanics and Geotechnical Engineering*, Istanbul, Turkey: 1303-1306.
63. Zeng, Q. L., Zhao C. G. and Gao F. P. (1995) : A Semi-analysis Element Method for Analyzing Transient Three-dimensional Temperature Field in Tunnel after Fire. *New Developments in Structure Engineering—Theories and Practices*, Beijing: 273-278.