

Professor Run Liu

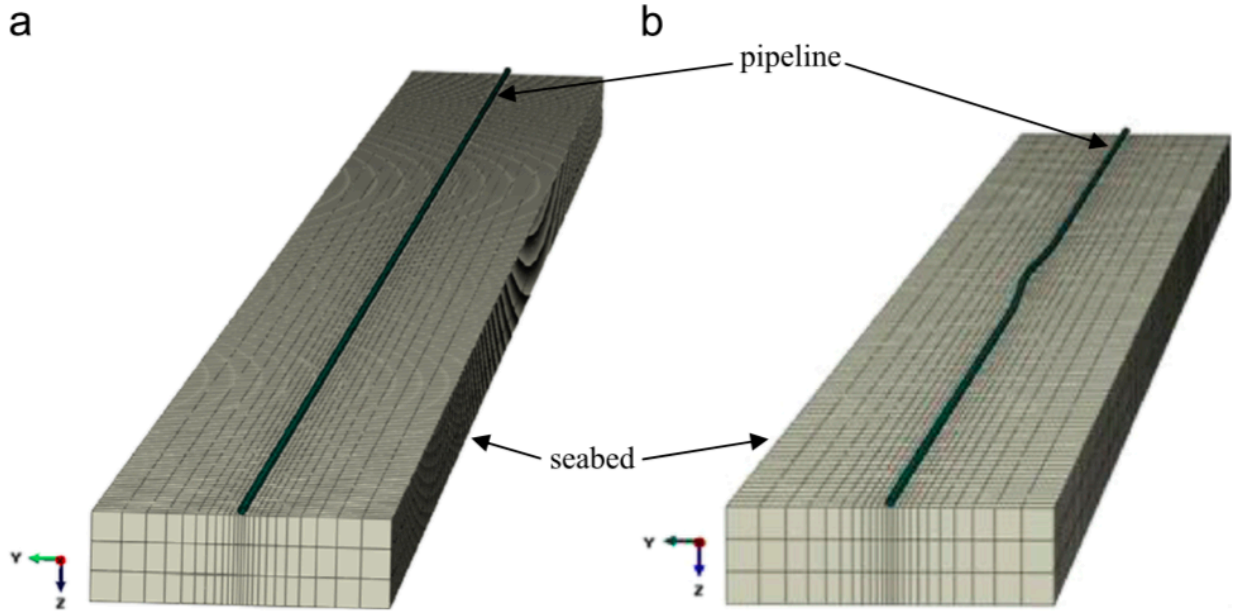


Fig. 5. Introduction of initial imperfection into the pipeline model. (a) Straight pipeline and (b) pipeline with initial imperfection.

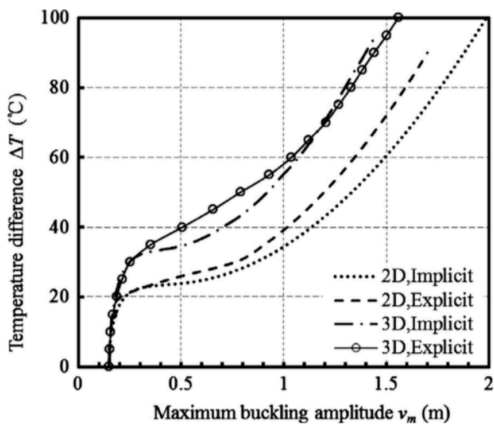


Fig. 8. Midpoint pipeline buckling amplitude versus operational temperature difference.

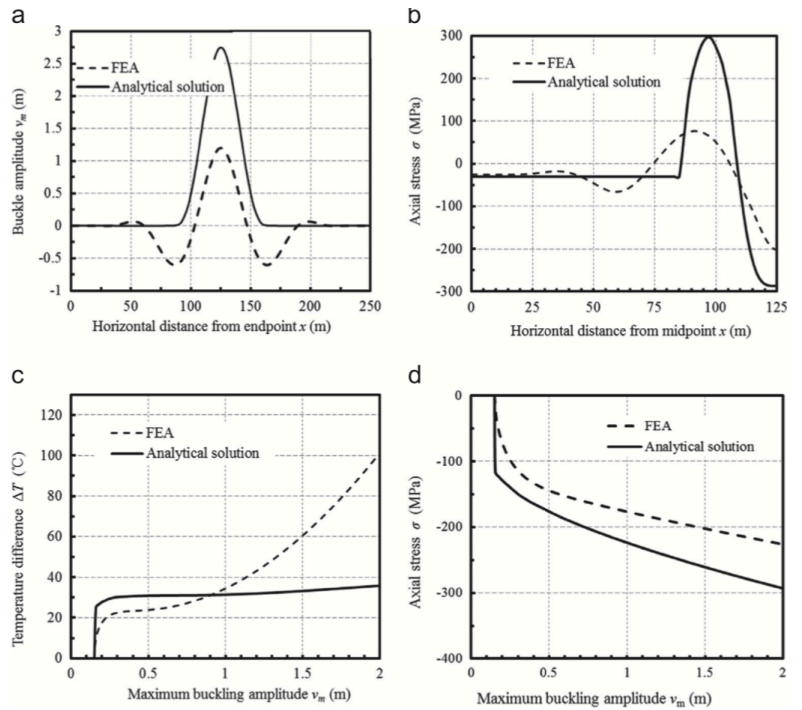


Fig. 11. Comparison of FEA model and analytical solution. (a) lateral deformation, (b) axial stress, (c) v_m vs. ΔT (d) v_m vs. σ .

The three figures above are from: Liu, R., Xiong, H., Wu, X., and Yan, S. (2014). Numerical studies on global buckling of subsea pipelines. *Ocean Engineering*, 78, 62–72.

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Selected Publications:

- Liu Run, Yan Shu-wang, Sun Guo-min. Improvement of the method for marine pipeline upheaval analysis under thermal stress. *Journal of Tianjin University*, 2005, 38(2): 124-128. (in Chinese)
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- Liu, R., Liu, W. B., Hong, Z. H., & Wang, L. (2015). A soil resistance model for subsea pipeline global lateral buckling analysis. *Rock and Soil Mechanics*, 36(9), 2433–2441.
- Le Wang and Run Liu, "The effect of a berm on the lateral resistance of a shallow pipeline buried in sand", *Ocean Engineering*, Vol. 121, pp 13-23, 2016
- Le Wang, Hongyan Ding, Biyao Peng and Run Liu, "Upper-bound analysis of maximal lateral resistance for pipelines without embedment in sand", *Journal of Pipeline Systems Engineering and Practice*, February 2017
- Zhaohui Hong and Run Liu, "Three-Dimensional Explicit Dynamic Numerical Method to Simulate a Deep-Sea Pipeline Exhibiting Lateral Global Buckling", *International Journal of Steel Structures*, Vol. 19, No. 5, pp 1393-1407, October 2019
- Chengfeng Li and Run Liu, "Numerical investigation into the effects of different initial imperfections on the lateral buckling of submarine pipelines", *Ocean Engineering*, Vol. 195, Article 106752, 1 January 2020