

Yang Liu

Experience

11/2015–present, Assistant Professor; Department of Mechanics, Tianjin University, Tianjin, P. R. China.

05/2018–07/2018, Postdoctorate Fellow; Department of Mathematics, City University of HongKong, Hong Kong, P. R. China.

05/2016–06/2016, Postdoctorate Fellow; Department of Mathematics, City University of HongKong, Hong Kong, P. R. China.

Education

08/2010–07/2015, Ph.D Candidate; Department of Mathematics, City University of Hong Kong, Hong Kong, P. R. China.

Supervisor: **Prof. Hui-Hui Dai.**

Thesis: Analytic Studies on Bifurcations of a Hyperelastic Layer-substrate Structure Under Uniaxial Compression.

09/2006–07/2010, Undergraduate; Department of Mathematics, Zhengzhou University, Zhengzhou, Henan Province, P. R. China.

Research Interests

Finite elasticity.

Bifurcation phenomena in solids.

Growth-induced instabilities.

Instabilities in Liquid crystal elastomers.

Publications (* corresponding author)

1. Yang Ye, **Yang Liu***, Ali Althobaiti and Yu-Xin Xie*. Localized bulging in an inflated bilayer tube of arbitrary thickness: Effects of the stiffness ratio and constitutive model. Submitted to *International Journal of Solids and Structures*.
2. Qiang Guo, Jiajuan Dong, **Yang Liu**, Xianghong Xu, Qinghua, Qin and Jianshan Wang*. Macroscopic and microscopic mechanical behaviors of climbing tendrils. *Acta Mechanica Sinica*. 2019, In press.
3. **Yang Liu***, Yang Ye, Ali Althobaiti and Yu-Xin Xie*. Prevention of localized bulging in an inflated bilayer tube. *International Journal of Mechanical Sciences*. 2019, **153-154**, 359–368.
4. Lishuai Jin, **Yang Liu*** and Zongxi Cai. Post-buckling analysis on growing tubular tissues: A semi-analytical approach and imperfection sensitivity. *International Journal of Solids and structures*. 2019, **162**, 121–134.
5. Chenyang, Song, Xiao Wang and **Yang Liu***. Stability analysis of an axially compressed hyper-elastic tube with confined boundary. *Chinese Journal of Solid Mechanics*. 2018, **39(2)**, 578–587.
6. Lishuai Jin, **Yang Liu*** and Zongxi Cai. Asymptotic solutions on the circumferential wrinkling of growing tubular tissues. *International Journal of Engineering Science*. 2018, **128**, 31–43.
7. **Yang Liu***. Axial and circumferential buckling of a hyperelastic tube under restricted compression. *International Journal of Non-linear Mechanics*. 2018, **98**, 145–153.
8. Yanjie Cao, Yanan Wang, **Yang Liu*** and Yuxin Xie*. Explicit computational model of dielectric elastomeric lenses. *Optics Express*. 2017, **25(23)**, 28710–28717.

9. Hui-Hui Dai* and **Yang Liu***. Critical thickness ratio for buckled and wrinkled fruits and vegetables. *Europhysics Letters*. 2014, **108**(4), 44003 (editor's choice and highlighted article).
10. **Yang Liu** and Hui-Hui Dai*. Compression of a layer-substrate structure: Transitions between buckling and surface modes. *International Journal of Engineering Science*. 2014, **80**, 74–89.
11. Shihui Fu*, Hongjun Wei and **Yang Liu**. Complete synchronization of chaotic systems with bidirectional coupling. *Journal of Zhengzhou University (Natural Science Edition)*. 2012, **44**(3), 29–33.

Grants

Principal Investigator: Stability and deformation analysis of thin liquid crystal elastomer film and tube under mechanical loads from National Natural Science Foundation of China, Grant No. 11602163, 2016.

Conference Talks

poster; The 1st National Congress on Soft Mechanics, Hangzhou, China, November 18-20, 2018. *Title: Analytic studies on buckling and post-buckling solutions in growing tubular tissues.*

speaker; Engineering Mechanics Institute International Conference 2018, Shanghai, China, November 2-4, 2018.
Title: Asymptotic studies on growing tubular tissues.

speaker; The 10th European Solid Mechanics Conference, Bologna, Italy, July 2-6, 2018. *Title: Post-buckling analysis of growing tubular bilayer tissues: semi-analytical solution and experiment.*

speaker; International Conference on Applied Mathematics 2018, HongKong, China, June 5-8, 2018.
Title: Asymptotic analysis concerning the circumferential wrinkling of growing tubular tissues.

speaker; Chinese Congress of Theoretical and Applied Mechanics 2017, Beijing, China, August 13-16, 2017.

Title: Localized bulging in an inflated hyperelastic bilayer tube of arbitrary thickness.

speaker; 24th International Congress of Theoretical and Applied Mechanics, Montreal, Canada, August 21-26, 2016.

Title: Post-buckling analysis of a hyperelastic layer-substrate structure under compression.

speaker; 17th U.S. National Congress on Theoretical & Applied Mechanics, Michigan State University, East Lansing, Michigan, US, June 15-20, 2014.

Title: Mode transitions of a hyperelastic layer-substrate structure under compression with applications to buckled and wrinkled fruits and vegetables.

speaker; CityU-SCUT Joint Workshop on Applied Mathematics, Hong Kong, China, November 22, 2013.

Title: Bifurcation analysis of a hyperelastic layer-substrate structure with applications to buckled and wrinkled vegetables and fruits.

Teaching

September 2011-August 2014.

Teaching Assistant (in English) at City University of Hong Kong, including tutorial Lectures and assignments grading.

June 2016-now.

Postgraduate course: Continuum Mechanics (in English).

Honers and Awards

2018 Zhi-Kang Shen fellowship of Tianjin University

2010-2014, Postgraduate Studentship (by UGC-allocated funds), City University of Hong Kong.

2010, First-honor class graduate.

2008-2009, National Scholarship.

2007-2008, First-class Scholarship of Zhengzhou University.

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2006-2007, Second-class Scholarship of Zhengzhou University.