Y. Jane Liu

Professor of Structural Mechanics

Areas of Specialty and Research Interests:

Primary research interests include solid mechanics, computational mechanics, composite materials, plates and shells, vibration analysis, computational algebraic geometry, symbolic computer system in engineering applications.

Education:

Ph.D., Structural Engineering, University of Hawaii at Manoa, Honolulu, 2002
M.S., Structural Engineering, University of Hawaii at Manoa, Honolulu, 1998
M.S. coursework completed, Structural Engineering, Southeast University, Nanjing, China, 1994
B.S., Engineering solid mechanics, Hohai University, Nanjing,

Selected Publications and Presentations:

1. A. Paruchuri, V. Kurnool, J. Liu & S. Idem “Flat Oval Duct Deflection – Finite-Element Analysis,” Journal Science and Technology for the Built Environment, published online 18 March, 2020. https://doi.org/10.1080/23744731.2020.1735263
2. T.M. Harrell, Y. J. Liu, J. Peddieson, “Application of Groebner basis methodology to geometrically nonlinear axisymmetric circular isotropic plates,” Computers and Structures, under review, 2019.
3. Shane Paulson, John Peddieson, Jane Liu, and Steve Mills “A Parametric Study of Linear and Nonlinear Models for Moisture Diffusion in Composite Sandwich Structures”, Journal of Composite Materials, April 2018, Issue 9, Volume 52, pp 1193-1201.
4. Colin G. Perry, Y. Jane Liu “Geometrically Nonlinear Analysis of Thin Rectangular Plates on a Pasternak Foundation Using Groebner Bases,” peer reviewed full paper, Proceeding of the 6th Annual International Conference on Architecture and Civil Engineering (ACE) 2018 in Singapore, GSTF.
5. John Peddieson, Jane Liu, “Axisymmetric Deformation of a Materially Nonlinear Circular Plate,” Meccanica, An International Journal of Theoretical and Applied Mechanics AIMETA, Springer, March 2017, Volume 52, Issue 4-5, pp 1035-1050.
6.

17. Y. Jane Liu, Bruno Buchberger, Markus Rosenkranz, and Alexander Maletzky “Examples of Non-commutative Groebner Bases to Plate Bending Analysis” presented at the 7th International Conference on Computational Methods ICCM 2016, Berkeley, CA, USA, August 1-4, 2016.
18.

33. Rafal Ablamowicz, Jane Liu "A Note on the Rodrigues Matrix of Rotation," Proc. 44th Annual Technical Meeting Society of Engineering Science 2007 on CD, Texas A&M University, College Station, Texas, October 21-24, 2007.
34. Jane Liu, "Applications of Algebraic Geometry Methods to Damage Detection in Plates with Large Deformation," Proc. 9th US National Congress on Computational Mechanics 2007on CD, San Francisco, California, July 22 - 26, 2007.
35. Jane Liu, Sirisha Madhavapeddy, and George Buchanan "Algebraic Geometry Approach in the Modeling of a Free Vibration Analysis of Laminated Toroidal Shells with Elliptical Cross-Section," Proc. 43rd Annual Technical Meeting Society of Engineering Science 2006, University Park, Pennsylvania, August 13