Jeffrey Wong

Contact Information

Duke University Department of Mathematics
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Research Interests

Stability of thin liquid films; suspension and multiphase thin film flows. Asymptotics and numerical methods for non-linear diffusion problems.

Employment

Duke University
Griffiths Assistant Research Professor, Fall 2017-Present

Education

University of California, Los Angeles, Los Angeles, California

Ph.D., Applied Mathematics (June 2017)
Thesis: Thin-film models for viscous suspension flows (Advisor: Dr. Andrea Bertozzi)

Harvey Mudd College, Claremont, California
B.S. in Mathematics (June 2011)

Honors/Awards

UCLA Dissertation Year Fellowship, 2016-17

Publications

Mavromoustaki, A., L. Wang, J. Wong and A. L. Bertozzi. *Modeling and simulation of particle-laden flow with surface tension* Nonlinearity Vol. 31 No. 7, 2018.

J. Wong and A. L. Bertozzi, *A conservation law model for bidensity suspensions on an incline.* Physica D (2016): 47-57.

Lee, S., J. Wong and A. L. Bertozzi. *Particle laden flows of bidensity suspensions.* Mathematical Modeling and Numerical Simulation of Oil Pollution Problems, The Reacting Atmosphere Volume 2, pp. 85-97, Mattias Ehrhardt, Ed., 2015.

Levy, R., S. Rosenthal and J. Wong. *Engineering flow states in a Marangoni-driven thin film with localized forcing.* Phys. Rev. E, Vol. 82, No. 5, 2010.

Conference Presentations

Particle-Laden Viscous Flow on An Incline: Singular Shock Solutions and Surface Tension Effects. SIAM Annual Meeting, Boston, MA, July 2016.

Surface tension models for particle laden thin films. APS March Meeting, Baltimore, MD, 2016.

Shock dynamics for bidensity suspensions on an incline. APS DFD, San Fransisco, CA, Nov. 2014.

Numerical modeling of bidensity suspensions in gravity-driven, thin-film flows. APS DFD Meeting, Pittsburgh, PA, Nov. 2013.

Teaching Experience

Duke University
Math 361S: Mathematical Numerical Analysis, Spring 2018
Math 353: Ordinary and Partial Differential Equations, Fall 2017

University of California, Los Angeles

Mentor, REU Program (Research Experience for Undergraduates), Summer 2015 and 2016.

Teaching Assistant:
Math 134 (Nonlinear Systems of ODEs), Spring 2016.
Math 142 (Mathematical Modeling), Fall 2015.
Math 151 (Applied Numerical Methods), Fall 2014 - Spring 2015, Winter 2016