ZHAO YANG

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EMPLOYMENT

Academy of Mathematics and Systems Science CAS, China

– Associate Professor (with tenure-track) *08/2022-current*

University of Illinois Urbana-Champaign, USA

– J. L. Doob Research Assistant Professor *08/2019-08/2022*
Mentors: Professors Vera Hur and Jared Bronski

EDUCATION

Indiana University, Bloomington, USA

– Doctor of Philosophy, Mathematics *08/2013-05/2019*
Advisor: Professor Kevin Zumbrun
Thesis: Traveling waves in an inclined channel and their stability
College of Arts and Sciences Dissertation Research Fellowship (*2018-2019)*

– Master of Science, Applied Statistics *08/2016-05/2018*

Fudan University, Shanghai, China

– Bachelor of Science, Mathematics and Applied Mathematics *09/2009-06/2013*

PUBLICATIONS

9. **Z. Yang** and K. Zumbrun, Multidimensional stability and transverse bifurcation of hydraulic shocks and roll waves in open channel flow, **J. Math. Fluid Mech.**, 27, 30 (2025). Link
8. G. Faye, L. M. Rodrigues, **Z. Yang**, and K. Zumbrun, Existence and stability of nonmonotone hydraulic shocks for the Saint Venant equations of inclined thin-film flow, **Arch. Ration. Mech. Anal.**, 248, 82 (2024). Link
7. V. Hur and **Z. Yang**, *Unstable Stokes waves*, **Arch. Ration. Mech. Anal.**, 247, 62 (2023). Link
6. L. M. Rodrigues, **Z. Yang** and K. Zumbrun, *Convective-wave solutions of the Richard-Gavrilyuk model for inclined shallow water flow*, **Water Waves** (2023).Link
5. S. Jung, **Z. Yang**, and K. Zumbrun, *Stability of strong detonation waves for Majda's model with general ignition functions*, **Quart. Appl. Math.**, 79, 357-365, (2021). Link
4. A. Sukhtayev, **Z. Yang**, and K. Zumbrun, *Spectral stabilty of hydraulic shock profiles*, **Phys. D**, 405, 132360 (2020). Link
3. **Z. Yang** and K. Zumbrun, *Stability of hydraulic shock profiles*, **Arch. Ration. Mech. Anal.**, 235, 195-285 (2020). Link
2. **Z. Yang** and K. Zumbrun, *Convergence as period goes to infinity of spectra of periodic traveling waves toward essential spectra of a homoclinic limit*, **J. Math. Pures Appl.**, 132, 27-40, (2019). Link
1. M. Johnson, P. Noble, L. M. Rodrigues, **Z. Yang**, and K. Zumbrun, *Spectral stability of inviscid roll-waves*, **Comm. Math. Phys.**, 367, 265-316 (2019). Link

PREPRINTS

5. Z. Jiao, L. M. Rodrigues, C. Sun, and **Z. Yang**, Small-amplitude finite-depth Stokes waves are transversally unstable, arXiv:2409.01663. Link

4. V. Hur and **Z. Yang**, Unstable capillary-gravity waves, arXiv: 2311.01368. Link

3. **Z. Yang** and K. Zumbrun, Multidimensional stability and transverse bifurcation of hydraulic shocks and roll waves in open channel flow, arXiv: 2309.08870. Link

2. B. Braker, J. Bronski, V. Hur, and **Z. Yang**, *Asymptotic stability of sharp fronts: Analysis and rigorous computation*, preprint, arXiv:2112.04700. Link

1. **Z. Yang**, *An alternative proof of modulation instability of Stokes waves in deep water*, preprint, arXiv:2109.12101. Link