Jincheng Yang

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RESEARCH INTERESTS

Analysis, dynamical systems, partial differential equations, and their application in fluid dynamics, plasma physics, optimal mass transportation.

EDUCATION

The University of Texas at Austin, Austin, Texas USA

Ph.D. Candidate in Mathematics (Pure)   Aug. 2017 – Present
Advisor: Luis A. Caffarelli and Alexis F. Vasseur

Xi'an Jiaotong University (XJTU), Xi'an, Shaanxi China

B.Sc. in Mathematics and Applied Mathematics (Elite Class)   Aug. 2013 – July 2017
Thesis: *Linear Inviscid Damping of a Shear Flow in a Half-Space and a Finite Channel*
Advisor: Dongsheng Li and Zhiwu Lin

HONORS AND AWARDS

University Graduate Continuing Fellowship, UT Austin	Mar 2021
Frank Gerth III Teaching Excellence Award, UT Austin	June 2020
Senate of College Council's TA of the Year, UT Austin	Apr 2019
Frank Gerth III Graduate Excellence Award, UT Austin	June 2018
Outstanding Student (The highest honor on campus, $1\%_{30000}$), XJTU	Oct 2016
National Scholarship, Ministry of Education, China	Sept 2016

PUBLICATIONS

Journal Articles

- Alexis Vasseur, Jincheng Yang. *Second Derivatives Estimate of Suitable Solutions to the 3D Navier–Stokes Equations*, Arch. Ration. Mech. Anal., **241**: 683–727 (2021)

- Zhiwu Lin, Jincheng Yang, Hao Zhu. *Barotropic Instability of Shear Flows*, Stud. Appl. Math., **144**: 289-326 (2020)

- Jincheng Yang, Zhiwu Lin. *Linear Inviscid Damping for Couette Flow in Stratified Fluid*, J. Math. Fluid Mech., **20**: 445-472 (2018)

Preprints

- Rui Gao, Jincheng Yang, Luhao Zhang. *Robust Policy Optimization for Feature-Based Newsvendor*, submitted (2021)

- Jincheng Yang. *Construction of Maximal Functions associated with Skewed Cylinders Generated by Incompressible Flows and Applications*, to appear in Ann. Inst. H. Poincaré Anal. Non Linéaire, arXiv:2008.05588 (2021)

ACADEMIC EXPERIENCE

Visiting

- *Georgia Institute of Technology*, Atlanta, GA   2016 – 2017
- *Columbia University in the City of New York*, New York City, NY   2015

Conferences and Workshops

- *Banff International Research Station*, New Mechanisms for Regularity, Singularity, and Long Time Dynamics in Fluid Equations   July 2021

- *Mathematical Sciences Research Institute*, Virtual Summer Graduate School: Introduction to Water Waves — July 2020
- *Northwestern University*, Summer School in Semiclassical Analysis — July 2019
- *Instituto de Ciencias Matemáticas*, Summer School on Fluid Mechanics at the ICMAT — June 2019
- *Columbia University*, Workshop on Free Boundary Problems — May 2019
- *The University of Texas at Austin*, On Nonlinear PDEs and their Applications — Mar 2019

Invited Talks
- American Mathematical Society, *Spring Western Sectional Meeting*
  - Special Session on Nonlinear PDEs and Fluid Dynamics — May 2021
- American Mathematical Society, *Spring Eastern Sectional Meeting*
  - Contributed Paper Session — Mar 2021

Seminar Talks
- Junior Analysis Seminar, *Shapley Extension and Application* — Apr 2021
- Junior Analysis Seminar, *Distributionally Robust Optimization* — Oct 2020
- Junior Analysis Seminar, *Oscillatory Integrals and Decay of Dispersive Equation* — Apr 2020
- ⋆ Ph.D. Candidacy Talk, *A New Covering Lemma and its Application in 3D Incompressible Navier–Stokes Equations* — Mar 2020
- Harmonic Analysis Reading Seminar, *Introduction to Hardy Space* — Nov 2019
- Junior Analysis Seminar, *A Covering Lemma for Fluid Equations and its Application to Navier–Stokes Equation* — Nov 2019
- Stochastic Calculus in Manifold Reading Seminar, *Manifold-valued Semimartingales and their Quadratic Variation* — Oct 2019
- Junior Analysis Seminar, *Regularity for a Local-Nonlocal Transmission Problem* — Apr 2019
- Sophex Seminar, *An Introduction to Stochastic Integrals* — Apr 2018
- Sophex Seminar, *Stability and Instability of Shear Flow in a Rotating System* — Sept 2017
- Fluid Mechanics Seminar, *Inviscid Damping of Couette Flow in a Stratified Fluid* — Apr 2017

Journal Refereeing
- SIAM Journal on Mathematical Analysis

TEACHING

Teaching Assistant
- M383D — *Methods of Applied Mathematics II* — Spring 2021
- M427J — *Differential Equations with Linear Algebra* — Spring 2019 – Fall 2020
- M427L — *Advanced Calculus for Applications II* — Fall 2018
- M408D — *Sequences, Series, and Multivariable Calculus* — Spring 2018
- M408K — *Differential Calculus* — Fall 2017

OUTREACH

Mentoring of Undergraduate Students
- Yongqi Pang, *on the topic of Statistics and Data Analysis* — Spring 2020
- Trey Minor, *on the topic of Differential Equations and Dynamical Systems* — Spring 2019
- Yan Cheng, *on the topic of Probability and Martingales* — Spring 2018