Jincheng Yang

▬ Appointments

2024–2025 **Member**, *Institute for Advanced Study*, Princeton, NJ

2022–2025 **L. E. Dickson Instructor**, *University of Chicago*, Chicago, IL

2017 **Visiting Scholar**, *Georgia Institute of Technology*, Atlanta, GA

▬ Education

2017-2022 **Ph.D. in Mathematics**, *The University of Texas at Austin*, Austin, TX

Advisor: Luis Caffarelli and Alexis Vasseur

2013-2017 **B.Sc. in Mathematics and Applied Mathematics** (Honors Program), *Xi'an Jiaotong University*, China

2011-2013 **Special Class for the Gifted Young**, *Xi'an Jiaotong University*, China

▬ Research Interests

Partial differential equations, fluid dynamics, Euler equation, Navier–Stokes equation.

▬ Publications and Preprints

2023 Luhao Zhang, Jincheng Yang, and Rui Gao. Optimal robust policy for feature-based newsvendor. *Management Science*, 2023.

Jincheng Yang. Vorticity interior trace estimates and higher derivative estimates via blow-up method. *arXiv e-prints*, 2023.

Alexis F. Vasseur and Jincheng Yang. Layer separation of the 3D incompressible Navier-Stokes equation in a bounded domain. *arXiv e-prints*, page arXiv:2303.05236, 2023.

Alexis F. Vasseur and Jincheng Yang. Boundary vorticity estimates for Navier-Stokes and application to the inviscid limit. *SIAM J. Math Anal.*, 55(4):3081–3107, 2023.

2022 Luhao Zhang, Jincheng Yang, and Rui Gao. A simple and general duality proof for Wasserstein distributionally robust optimization. *arXiv e-prints*, page arXiv:2205.00362, 2022.

Jincheng Yang, Luhao Zhang, Ningyuan Chen, Rui Gao, and Ming Hu. Decision-making with side information: a causal transport robust approach. *OptOnline e-prints*, 2022.

Jincheng Yang. Construction of maximal functions associated with skewed cylinders generated by incompressible flows and applications. *Ann. Inst. H. Poincaré C Anal. Non Linéaire*, 39(4):793–818, 2022.

2021 Alexis F. Vasseur and Jincheng Yang. Second derivatives estimate of suitable solutions to the 3D Navier-Stokes equations. *Arch. Ration. Mech. Anal.*, 241(2):683–727, 2021.

2020	Zhiwu Lin, Jincheng Yang, and Hao Zhu. Barotropic instability of shear flows. *Stud. Appl. Math.*, 144(3):289–326, 2020.
2018	Jincheng Yang and Zhiwu Lin. Linear inviscid damping for Couette flow in stratified fluid. *Journal of Mathematical Fluid Mechanics*, 20(2):445–472, 2018.

Honors and Awards

May 2022	Frank Gerth III Outstanding Dissertation Award, *UT Austin*
Mar 2021	University Graduate Continuing Fellowship, *UT Austin*
June 2020	Frank Gerth III Teaching Excellence Award, *UT Austin*
Apr 2019	Senate of College Council's TA of the Year, *UT Austin*
June 2018	Frank Gerth III Graduate Excellence Award, *UT Austin*
Oct 2016	Outstanding Student (The highest honor on campus, $^{10}\!/_{30000}$), *XJTU*
Sept 2016	National Scholarship, *Ministry of Education, China*

Invited Talks

Nov 2023	Calderón-Zygmund Analysis Seminar, *University of Chicago*
Nov 2023	PDE Seminar, *Purdue University*
Oct 2023	Applied Mathematics and Statistics Seminar, *Johns Hopkins University*
Oct 2023	8th Annual Meeting of the SIAM Central States Section, *University of Nebraska-Lincoln*
Aug 2023	10th International Congress on Industrial and Applied Mathematics, *Waseda University (zoom talk)*
Jul 2023	PDE and Applications Seminar, *Chinese Academy of Sciences*
May 2023	Midwest PDE Seminar, *University of Notre Dame*
Jan 2023	Calderón-Zygmund Analysis Seminar, *University of Chicago*
Dec 2022	PDE and Applications Seminar, *Chinese Academy of Sciences (zoom talk)*
Nov 2022	Analysis of Fluids and Related Topics, *Princeton University*
Oct 2022	Informs Annual Meeting 2022, *Indianapolis*
May 2021	AMS Spring Western Sectional Meeting, *San Francisco State University (zoom talk)*
Mar 2021	AMS Spring Eastern Sectional Meeting, *Brown University (zoom talk)*

Teaching Experience

Instructor

Spring 2024	Math 18500 – Mathematical Methods in the Physical Sciences III
Winter 2024	Math 27300 – Basic Theory of Ordinary Differential Equations
Spring 2023	Math 18500 – Mathematical Methods in the Physical Sciences III
Winter 2023	Math 20400 – Analysis in $\mathbb{R}^n$ II
Fall 2022	Math 18500 – Mathematical Methods in the Physical Sciences III

Teaching Assistant

Spring 2021	M383D – Methods of Applied Mathematics II
2019-2020	M427J – Differential Equations with Linear Algebra

Fall 2018	M427L – Advanced Calculus for Applications II
Spring 2018	M408D – Sequences, Series, and Multivariable Calculus
Fall 2017	M408K – Differential Calculus

Mentoring Undergraduate Students

Fall 2021	Kyle Alkire, *on the topic of Schauder Theory in Elliptic Equations*
Spring 2020	Yongqi Pang, *on the topic of Statistics and Data Analysis*
Spring 2019	Trey Minor, *on the topic of Differential Equations and Dynamical Systems*
Spring 2018	Yan Cheng, *on the topic of Probability and Martingales*