

---

## Appointments

- 2025– **Assistant Professor**, *Johns Hopkins University*, Baltimore, MD.  
2024–2025 **Member**, *Institute for Advanced Study*, Princeton, NJ.  
2022–2024 **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

- APDE **Analysis and Partial Differential Equations**, *dynamical systems, fluid dynamics, kinetic theory*.  
Euler equation, Navier–Stokes equation, Boltzmann equation, Fokker–Planck equation.  
MSOR **Management Science and Operation Research**, *distributionally robust optimization, optimal mass transportation, risk measure*.  
Inventory problem, risk management, portfolio optimization.

---

## Publications and Preprints

- [1] Matei P. Coiculescu and Jincheng Yang. Conditional Liouville theorems for the Navier–Stokes equations. *arXiv e-prints*, 2025. [arXiv:2506.14533](#).
- [2] 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. [OptOnline:20639](#).
- [3] Jincheng Yang, Vincent R. Martinez, Anna L. Mazzucato, and Alexis F. Vasseur. Energy dissipation near the outflow boundary in the vanishing viscosity limit. *Indiana University Mathematics Journal*, 2025. Forthcoming. [arXiv:2410.13127](#).
- [4] Fei Cao and Jincheng Yang. Quantitative convergence guarantees for the mean-field dispersion process. *Discrete and Continuous Dynamical Systems*, 2025. Forthcoming. [arXiv:2406.05043](#).

- [5] Jincheng Yang. Vorticity interior trace estimates and higher derivative estimates via blow-up method. *Journal of Differential Equations*, 442:113486, 2025. [arXiv:2308.09350](#), [doi:10.1016/j.jde.2025.113486](#).
- [6] Luhao Zhang, Jincheng Yang, and Rui Gao. A short and general duality proof for wasserstein distributionally robust optimization. *Operations Research*, 73(4):2146–2155, 2025. URL: <https://doi.org/10.1287/opre.2023.0135>, [arXiv:2205.00362](#), [doi:10.1287/opre.2023.0135](#).
- [7] Alexis F. Vasseur and Jincheng Yang. Layer separation of the 3D incompressible Navier–Stokes equation in a bounded domain. *Communications in Partial Differential Equations*, 49(4):381–409, 2024. URL: <https://doi.org/10.1080/03605302.2024.2346146>, [arXiv:2303.05236](#), [doi:10.1080/03605302.2024.2346146](#).
- [8] Luhao Zhang, Jincheng Yang, and Rui Gao. Optimal robust policy for feature-based newsvendor. *Management Science*, 70(4):2315–2329, 2024. [OptOnline:18579](#). URL: <https://doi.org/10.1287/mnsc.2023.4810>, [doi:10.1287/mnsc.2023.4810](#).
- [9] Alexis F. Vasseur and Jincheng Yang. Boundary vorticity estimates for Navier–Stokes and application to the inviscid limit. *SIAM Journal on Mathematical Analysis*, 55(4):3081–3107, 2023. URL: <https://doi.org/10.1137/22m1503567>, [arXiv:2110.02426](#), [doi:10.1137/22m1503567](#).
- [10] Jincheng Yang. Construction of maximal functions associated with skewed cylinders generated by incompressible flows and applications. *Annales de l’Institut Henri Poincaré C. Analyse Non Linéaire*, 39(4):793–818, 2022. URL: <https://doi.org/10.4171/aihpc/20>, [arXiv:2008.05588](#), [doi:10.4171/aihpc/20](#).
- [11] Alexis F. Vasseur and Jincheng Yang. Second derivatives estimate of suitable solutions to the 3D Navier-Stokes equations. *Archive for Rational Mechanics and Analysis*, 241(2):683–727, 2021. URL: <https://doi.org/10.1007/s00205-021-01661-4>, [arXiv:2009.14291](#), [doi:10.1007/s00205-021-01661-4](#).
- [12] Zhiwu Lin, Jincheng Yang, and Hao Zhu. Barotropic instability of shear flows. *Studies in Applied Mathematics*, 144(3):289–326, 2020. URL: <https://doi.org/10.1111/sapm.12297>, [arXiv:1801.00950](#), [doi:10.1111/sapm.12297](#).
- [13] Jincheng Yang and Zhiwu Lin. Linear inviscid damping for Couette flow in stratified fluid. *Journal of Mathematical Fluid Mechanics*, 20(2):445–472, 2018. URL: <https://doi.org/10.1007/s00021-017-0328-3>, [arXiv:1610.08924](#), [doi:10.1007/s00021-017-0328-3](#).

---

## Honors and Awards

May 2022 Frank Gerth III Outstanding Dissertation Award, *UT Austin*  
 Mar 2021 University Graduate Continuing Fellowship, *UT Austin*  
 Apr 2019 Senate of College Council’s TA of the Year, *UT Austin*

---

## Invited Talks

Jul 2025 ICCOPT 2025, *University of Southern California*.

May 2025 2025 AWM Research Symposium, *University of Wisconsin, Madison*.  
 May 2025 SIAM Conference on Applications of Dynamical Systems (DS25), *Denver*.  
 Apr 2025 PDE and Analysis Seminar, *University of California, Los Angeles*.  
 Apr 2025 Analysis Seminar, *The University of Texas at Austin*.  
 Mar 2025 Analysis of Fluids and Related Topics, *Princeton University*.  
 Nov 2024 Analysis and Mathematical Physics, *Institute for Advanced Study*.  
 Nov 2024 Harmonic Analysis & PDE Seminar, *CUNY Graduate Center*.  
 Oct 2024 Informs Annual Meeting 2024, *Seattle*.  
 Oct 2024 PDE Seminar, *Brown University*.  
 Oct 2024 Short Talks by Postdoctoral Members, *Institute for Advanced Study*.  
 Aug 2024 Probabililty Seminar, *University of Illinois Urbana-Champaign*.  
 Jun 2024 EquaDiff 2024, *Karlstad University*.  
 May 2024 Recent Advances in Nonlinear Partial Differential Equations, *University of Minnesota*.  
 May 2024 SITE Research Center Talk Series, *New York University Abu Dhabi (zoom talk)*.  
 Mar 2024 AMS Spring Southeastern Sectional Meeting, *Florida State University*.  
 Feb 2024 Simons Turbulence Seminar, *Johns Hopkins University (zoom talk)*.  
 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 8<sup>th</sup> Annual Meeting of the SIAM Central States Section, *University of Nebraska-Lincoln*.  
 Aug 2023 10<sup>th</sup> 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)*.

## Service

### Seminar Organizing

2023–2024 **Calderón–Zygmund Analysis Seminar**, *University of Chicago*.  
 2019 **Harmonic Analysis Reading Seminar**, *University of Texas at Austin*.

### Journal Refereeing

SIAM Journal on Mathematical Analysis  
 Journal of Differential Equations  
 Mathematical Programming

Johns Hopkins University • 3400 N Charles St • Baltimore, MD 21218

✉ [jincheng@jhu.edu](mailto:jincheng@jhu.edu)    🌐 [jincheng-yang.github.io](https://github.com/jincheng-yang)

Nonlinearity

---

## 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

### Research Experience for Undergraduates

- Summer 2024 Minh Pham, *on the topic of Nonlinear Integral Equations*  
Summer 2024 Michael Lee, *on the topic of Partial Regularity Theory of Navier-Stokes Equations*  
Summer 2024 Zichen Lu, *on the topic of Inviscid Damping of Euler Equations*

### Reading Course

- Spring 2024 Dante Strollo and Jakob Wellington, *on the topic of Fourier Analysis*

### Directed Reading Program

- Summer 2024 Ariana Qin, *on the topic of Stochastic Calculus and Stochastic Control*  
Spring 2024 Ariana Qin, *on the topic of Optimal Control Theory*  
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*