

LILI HE

Johns Hopkins University
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ACADEMIC INTERESTS

Nonlinear Wave Equations, General Relativity, Mathematical Physics, Microlocal Analysis, Scattering Theory

EDUCATION

Johns Hopkins University

- Ph.D., Mathematics, (Expected graduation: May 2023)
- Thesis Advisor: Hans Lindblad

University of Science and Technology of China

- B.S., Mathematics, (May 2017)

PUBLICATIONS AND PREPRINTS

3. *The linear stability of weakly charged and slowly rotating Kerr-Newman family of charged black holes.* arXiv:2301.08557.
2. *Masses at null infinity for Einstein's equations in harmonic coordinates* (joint with H. Lindblad). To appear in Pure and Appl. Math. Quarterly.
1. *Scattering from Infinity of the Maxwell Klein Gordon Equations in Lorenz Gauge.* Commun. Math. Phys. 386, 1747–1801 (2021).

INVITED TALKS

7. PDE Seminar, Vanderbilt University, April 2023
6. PDE mini-school: geometric singular analysis and black holes, UNC Chapel Hill, March 2023
5. PDE Seminar, Georgia Tech, March 2023
4. Analysis and PDE Seminar, UC Berkeley, November 2022
3. Advances in Nonlinear differential equations : Analysis, Numerics and Applications, Tianjin University, August 2022
2. Analysis and PDE Seminar, University of Kentucky, October 2021
1. PDE Seminar, University of Science and Technology of China, March 2021

¹Updated January 28, 2023

CONFERENCES AND WORKSHOPS ATTENDED

- Hamiltonian Methods and Asymptotic Dynamics Workshop, online, December 2021
- New Trends in Geometric PDEs, online, November 2021
- ESI workshop on Mathematical Perspectives of Gravitation beyond the Vacuum Regime, online, February 2021
- Current Developments in Mathematics 2020, online, January 2021
- Southern California Analysis and PDE Conference, UC San Diego, November 2019
- Conference on Nonlinear Partial Differential Equations and Applications, University of Michigan, July 2019
- UNC PDE Mini-school, University of North Carolina at Chapel Hill, December 2018
- Summer School on Mathematical General Relativity and the Geometric Analysis of Waves of Fluids, MIT, June 2018

AWARDS

- Kelly Miller Fellowship, Johns Hopkins University (2018, 2019)
- Philip Hartman Graduate Fellowship, Johns Hopkins University (2017)
- China National Scholarship, USTC (2016)

TEACHING EXPERIENCE

Johns Hopkins University

- Teaching assistant for Math 202: Calculus III (Spring 2022)
- Grader for Math 607: Complex variables (Spring 2022)
- Teaching assistant for Math 637: Functional Analysis (Fall 2020, Fall 2021, Fall 2022)
- Teaching assistant for Math 405: Real Analysis I (Fall 2020, Fall 2021, Fall 2022)
- Teaching assistant for Math 201: Linear Algebra (Summer 2021)
- Teaching assistant for Math 107: Calculus II (Biology and Social Science) (Spring 2020)
- Instructor for Math 302: Differential Equations and Applications (Summer 2019)
- Teaching assistant for Math 302: Differential Equations and Applications (Spring 2019, Summer 2020, Summer 2021, Summer 2022)
- Teaching assistant for Math 106: Calculus I (Biology and Social Science) (Fall 2018)
- Teaching assistant for Math 109: Calculus II (Engineering and Physical Science) (Summer 2018)
- Teaching assistant for Math 108: Calculus I (Engineering and Physical Science) (Summer 2018, Fall 2019)
- Grader for Math 311: Methods of Complex Analysis (Spring 2018)
- Grader for Math 443: Fourier Analysis (Fall 2017)

SERVICE

- Mentor for the Directed Reading Program at JHU (Spring 2021, Fall 2021, Spring 2022)