

# Jie Liu

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## CONTACT INFORMATION

New York University Abu Dhabi  
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## RESEARCH

Nonlinear dispersive and hyperbolic equations, fluid equations.

## EMPLOYMENT

**Division of Science, New York University Abu Dhabi**

Post-Doctoral Associate, 2023 - Present

## EDUCATION

**Shanghai Center for Mathematical Sciences, Fudan University**

Ph.D., Applied Mathematics, 2018 - 2023

- Advisor: Zhen Lei
- Thesis: Long Time Behavior of Three Classes of Nonlinear Hyperbolic Equations

**School of Mathematical Sciences, Fudan University**

B.S. in Mathematics, 2014 - 2018

## PUBLICATIONS

### Preprints

[5] *Energy transfer and radiation in Hamiltonian nonlinear Klein-Gordon equations: general case*, with Z. Lei and Z. Yang, **Preprint** arxiv: 2307.16191. (Submitted)

[4] *Energy transfer, weak resonance, and Fermi's golden rule in Hamiltonian nonlinear Klein-Gordon equations*, with Z. Lei and Z. Yang, **Preprint** arxiv: 2201.06490. (Submitted)

### Refereed journal articles

[3] *Weak solutions of the three-dimensional hypoviscous elastodynamics with finite kinetic energy*, with K. Chen, **J. Differential Equations** 339 (2022), 637-665.

[2] *Scattering for the quasilinear wave equations with null conditions in two dimensions*, with D. He and K. Wang, **J. Differential Equations** 269 (2020), no. 4, 3067-3088.

[1] *On the Constantin-Lax-Majda model with convection*, with Z. Lei and X. Ren, **Comm. Math. Phys.** 375 (2020), no. 1, 765-783.

## CONFERENCE TALKS

*On the Constantin-Lax-Majda Model with Convection*, East Asian Core Doctoral Forum on Mathematics 2020, Kavli Institute for the Physics and Mathematics of the Universe, The University of Tokyo, January 2020.

*Weak solutions of the three-dimensional hypoviscous elastodynamics with finite kinetic energy*, Online Conference on Partial Differential Equations in Applications, National Center for Applied Mathematics in Shanghai, Fudan University, August 2022.

*Energy transfer and generalized Fermi's Golden Rule in Hamiltonian nonlinear Klein-Gordon equations*, Conference on Theory and Applications of PDEs, Central China Normal University, Wuhan, December 2022.

*Energy transfer and generalized Fermi's Golden Rule in Hamiltonian nonlinear Klein-Gordon equations*, Mathematical Perspectives Forum, Southwest Jiaotong University, December 2022.

SEMINAR TALKS     *Energy transfer and generalized Fermi's Golden Rule in Hamiltonian nonlinear Klein-Gordon equations*, PDE Seminar, Fudan University, December 2022.

*Energy Transfer and Radiation in Hamiltonian Klein-Gordon Equations*, Peking University, July 2023.

*On the well-posedness, blow up, and long time dynamics of the De Gregorio equation*, Analysis and PDE seminar, New York University Abu Dhabi, October 2023.

TEACHING	Fall	2021	Teaching Assistant, Equations of Mathematical Physics
	Spring	2020	Teaching Assistant, Mathematical Analysis II
	Fall	2019	Teaching Assistant, Ordinary Differential Equation
	Spring	2019	Teaching Assistant, Equations of Mathematical Physics
	Fall	2018	Teaching Assistant, Abstract Algebra

HONORS & AWARDS	2023	Outstanding Graduates, Fudan University
	2020	National scholarship for Doctoral Students, Fudan University
	2019	National scholarship for Postgraduates, Fudan University
	2018	Honors Student Award In Mathematics, National Top Talent Undergraduate Training Program
	2018	Outstanding Graduates, Fudan University
	2017	National Scholarship for Undergraduates, Fudan University
	2017	Bronze medal (Team), Honor prize in S.T.Yau College Student Mathematics Contest (Subject: Analysis and Differential Equations)
	2017	First Prize in Chinese Mathematical Competitions for University Students
	2013	Silver medal in Chinese Mathematical Olympiad

SERVICES     **Refereeing**

ARMA