

Chenjie Fan

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Research Interest Nonlinear Dispersive Equation, Harmonic Analysis , Evolution Equations, Stochastic PDEs

Education **Massachusetts Institute of Technology**, Cambridge, MA
Ph.D., Mathematics, 2017
• Advisor: Gigliola Staffilani
Peking University, Beijing, China
B.S., Mathematics, July 2012
Program Associate, **MSRI**, 2015 Fall

Employment L.E. Dickson Instructor, Math Department, University of Chicago, 2017-2020.

Publications and Preprints *2D-Defocusing Nonlinear Schrödinger Equation with Random Data on irrational tori*, to be posted soon on arXiv, joint with Gigliola Staffilani, Hong Wang, Yumeng Ou.

A Wong-Zakai theorem for mass critical NLS. Joint with Weijun Xu. arXiv link, submitted.

Decay of the stochastic linear Schrödinger equation in $d \geq 3$ with small multiplicative noise. Joint with Weijun Xu. arXiv link, submitted.

Subcritical approximations to stochastic defocusing mass-critical nonlinear Schrödinger equation on \mathbb{R} . Joint with Weijun Xu. arXiv link, to appear in Journal of Differential Equations.

Global well-posedness for the defocusing mass-critical stochastic nonlinear Schrödinger equation on \mathbb{R} at L^2 regularity. joint with Weijun Xu. arXiv link, submitted.

On a bilinear Strichartz estimate on irrational tori, joint with Gigliola Staffilani, Hong Wang, Bobby Wilson, Analysis & PDE , Volume 11, No. 4, 2018. arXiv link

The L^2 weak sequential convergence of radial mass critical NLS solutions with mass above the ground state, to appear in International Mathematics Research Notices , arXiv link

Log-log blow up solutions blow up at exactly m points, Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire, Volume 34, Issue 6, November-December 2017, Pages 1429-1482. arXiv link

On a variational problem related to NLS on Hyperbolic space, joint with Peter Kleinhenz, arXiv link

Convergence of eigenvalues to the support of the limiting measure in critical β matrix models, joint with Alice Guionnet, Yuqi Song, Andi Wang, Random Matrices: Theory and Applications, Vol.4, No. 3 (2015), arXiv link

Research Talks

Analysis seminar, University of Massachusetts Amherst, 2019

Paths between Probability, PDEs, and Physics, Imperial, London, England, 2019

Analysis and PDE seminar, USC, 2019

PDE and Analysis seminar, MIT, 2019

Mathematical Analysis and Computation for Quantum Systems, BICMR/Peking University, Beijing, China, 2019

Calderon-Zygmund Analysis Seminar, Chicago, 2018

Calderon-Zygmund Analysis Seminar, Chicago, 2017

FRG conference, Princeton, 2017

AMS Special Session, University of Central Florida, 2017

Calderon-Zygmund Analysis Seminar, Chicago, 2017

Columbia Geometry and Analysis Seminar, Columbia, 2017

JMM, AMS Special Session on Recent Progress on Nonlinear Dispersive and Wave Equations , Atlanta, 2017

KI-Net Young Researcher workshop, Duke, 2016

FRG conference, MIT, 2016

Analysis-Geometry Seminar, Northeastern, 2016

3rd Annual Graduate Student Math Conference in Analysis, Brown, 2016

Harmonic Analysis and Differential equations student seminar , UC Berkeley, 2015

Honor and Awards

- AMS Simons Travel Grant
- Rogers Prize for SPUR in MIT 2013;
- MIT Presidential Fellowship 2012-2013;
- Gold Medal for analysis and differential equations (individual) of S.T. Yau College math contests 2011;
- Gold Medal for team of S.T. Yau college math contests 2011;

Expository talks

I gave several expository talks on Random Data Cauchy Theory in student lunch seminar, MSRI, 2015 Fall.

I also gave an expository talk on Concentration Compactness in Pumagrass seminar, MIT, 2015 Spring.

Activity	<p>I was organizing a reading group on regularity structure, in the Spring semester, 2015-2016.</p> <p>I am helping organize the Calderon-Zygmund Analysis Seminar.</p>
Teaching and Grading	<p>2019 Basic ODE, 23700, lecturer.</p> <p>2019 Analysis 20510, lecturer.</p> <p>2019 Analysis 20500, lecturer.</p> <p>2019 Analysis 20400, lecturer.</p> <p>2019, Analysis 20400, lecturer.</p> <p>2018, Analysis 20300, lecturer.</p> <p>2018, Analysis 20500, lecturer.</p> <p>2018, Analysis 20410, lecturer.</p> <p>2017 Fall, Analysis 20400, lecturer.</p> <p>2017 Fall, Analysis 20310, lecturer.</p> <p>2016 Fall 18.02 Calculus, recitation instructor.</p> <p>2016 Spring 18.02 Calculus, recitation instructor.</p> <p>2015 Spring 18.03 Differential Equations, recitation instructor.</p> <p>2014 Fall 18.303 Linear Partial Differential Equations, grader.</p> <p>2013 Fall 18.303 Linear Partial Differential Equations, grader.</p>
Mentoring	<p>2016 January, Direct Reading Program (DRP).</p> <p>2014 Summer, Mentor for Summer Program in Undergraduate Research (SPUR) .</p> <p>2013 Summer, Mentor for Summer Program in Undergraduate Research (SPUR).</p>
Conference and Summer School attended	<p>Paths between Probability, PDEs, and Physics, Imperial, London, England, 2019</p> <p>Mathematical Analysis and Computation for Quantum Systems, BICMR/Peking University, Beijing, China, 2019</p> <p>FRG conference, Chicago, 2018</p> <p>FRG conference, Princeton, 2017</p> <p>FRG conference, MIT, 2016</p> <p>IHES summer school on nonlinear waves, IHES, 2016</p>

Oberwolfach workshop on Nonlinear Evolution Problems, MFO, 2016

Analysis and Beyond, celebrating Jean Bourgain's work and impact, IAS, 2016

Analysis, PDE's, and Geometry, A conference in honor of Sergiu Klainerman , Princeton, 2016

New challenges in PDE: Deterministic dynamics and randomness in high and infinite dimensional systems, MSRI, 2015

Geometric non-linear analysis: Conference on the occasion of Michael Struwe's 60th birthday, ETH, 2015

Symposium: 50 years of mathematics at the FIM, ETH ,2015

The Eighteenth Riviere-Fabes Symposium on Analysis and PDE, Minnesota, 2015

Harmonic Analysis & Partial Differential Equations: Recent Developments & Future Directions, A conference in honor of C.E. Kenig, Chicago, 2014