Qi Zhang

Postdoc

BISMA

Beijing, China

Email: qzhang82@hawk.iit.edu

BOA: Mar 9, 1992

(+86) 18571476242

Education

Ph. D. in Applied Mathematics, Illinois Institute of Technology (Advisor: Jinqiao, Duan), USA, 2018 to present

M. S. in Applied Mathematics, Wuhan Institute of Physics and Mathematics, (Advisor: Yujin, Guo), China, 2018

B. S. in Statistics, Northwest Normal University, China, 2014

Research Interests

My research interests are in stochastic differential equations (SDEs), partial differential equations (PDEs), and their applications in quantum and statistical physics. My current research focuses on singular SPDEs and SDEs with jump noises. I am interested in the following topics:

(Singular) stochastic partial differential equations

Lévy processes and nonlocal partial differential equations

Non-equilibrium statistical physics

Variational methods and critical point theory

Publications and Preprints

1. Zhang, Q., Duan, J. *Energetic Variation with the Anderson Hamiltonian*, ArXiv e-prints. https://arxiv.org/abs/2111.10313. (2021)

2. Zhang, Q. *Global well-posedness for the nonlinear generalized parabolic Anderson model equation*. To appear in Stochastics and Dynamics.

3. Zhang, Q., Duan, J. *Linear Response Theory for Nonlinear Stochastic Differential Equations with α-Stable Lévy Noises*. J. Stat. Phys. **182**, 32 (2021).

4. Zhang, Q., Duan, J., Chen, Y. *Global solution and blow-up of the stochastic nonlinear Schrödinger system*. J. Math. Phys. **61**, 061504 (2020).

5. Guo, Y., Luo, Y., Zhang, Q. *Minimizers of mass critical Hartree energy functionals in bounded domains*. J. Differ. Equ **265**, 10, 5177-5211 (2018).

6. Li, S., Zhang, Q., Zhu, X. *Existence and limit behavior of prescribed L^2-norm solutions for Schrödinger-Poisson-Slater systems in $\mathbb{R}^3$* . Math. Methods Appl. Sci. **40**, 7705-7721 (2017).

Teaching Experience

From Fall 2018 to present, I have been TA at Illinois Tech for many courses:

Calculus II, lead recitation and lab,	2019 fall-2020 fall
Real Analysis,	2018 fall, 2019, spring
Probability and Statistics for Electrical and Computer Engineers,	2021 spring
Numerical Linear Algebra,	2020 fall, 2021 fall
Elementary Linear Algebra,	2019 spring
Geometry,	2018 fall

In this semester, I also lead the qualifying exam preparatory session. The weekly session reviewed topics related to qualifying exams. It covered Applied Analysis I and Computational Mathematics I.

Awards

The College of Computing, Illinois Institute of Technology	
Excellence in Dissertation Research award,	2021
The Department of Applied Mathematics, Illinois Institute of Technology	
Karl Menger Student Award for Exceptional Scholarship Graduate,	2022

Talks and Conferences

Technical University of Munich, Zoom meeting, January 19, 2022.
  Title: *Nonlinear singular SPDEs with the Anderson Hamiltonian of parabolic and elliptic type*

Third Symposium on SPDE. Huazhong University of Science and Technology, Zoom meeting, June 5,2021.
  Title: *Global well-posedness for the nonlinear generalized parabolic Anderson model equation.*

Stochastic Dynamics Seminar. Huazhong University of Science and Technology, Zoom meeting, July 30,2020.
  Title: *Linear Response Theory for Nonlinear Stochastic Differential Equations with α-stable Lévy Noises.*

Menger Day, Poster Session. Illinois Institute of Technology, Chicago, IL, March 5-6, 2020
  Title: *Global Solution and Blow-up of the Stochastic Nonlinear Schrödinger system.*

Summer School in Semiclassical Analysis. Northwestern University, Evanston, IL, July 29-Aug, 16, 2019.

Stochastic Processes and their Application 2019. Northwestern University, Evanston, IL, July 8-12, 2019.

Skills

Language: English (fluent), Mandarin (native).
Coding: Python, Matlab, Mathematica.

October 25, 2022