

Yi HU

Department of Mathematical Sciences
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Education

- Aug 2012, Ph.D. in Mathematics, University of Illinois at Urbana-Champaign
 - Advisor: Dr. Xiaochun Li
 - Dissertation: *Discrete Fourier restriction phenomenon associated with some periodic dispersive equations*
- July 2008, M.S. in Mathematics, University of Chinese Academy of Sciences
 - Advisor: Dr. Dunyan Yan
 - Thesis: *Double Hilbert transform on product functions and boundedness of truncated operator*
- July 2005, B.S. in Mathematics, Tsinghua University
 - Advisor: Dr. Zhixin Liu
 - Thesis: *Truncated error estimate on sampling theorem*

Professional Employment

- July 2013 – Present, Assistant Professor, Georgia Southern University
- Sept 2012 – June 2013, Member, Institute for Advanced Study

Research Interests

- Harmonic analysis
- Partial differential equations
- Analytic number theory

Research Papers

- Published/Submitted
 - (with H. Fu, H. Liu, B. Han and Y. Yang) Elastic-net regularization for nonlinear inverse problems: Convergence analysis and proximal iterative algorithm, *J. Inverse Ill-posed Probl.*, Accepted.

- (with X. Li) Local well-posedness of periodic fifth-order KdV-type equations, *J. Geom. Anal.* **25** (2015), no. 2, 709–739.
- (with X. Li) Discrete Fourier restriction associated with Schrödinger equations, *Rev. Mat. Iberoam.* **30** (2014), no. 4, 1281–1300.
- (with X. Li) Discrete Fourier restriction associated with KdV equations, *Anal. PDE* **6** (2013), no. 4, 859–892.
- Truncated error estimate on sampling theorem, *J. Grad. Univ. Chin. Acad. Sci. (Chin. Ser.)* **25** (2008), no. 4, 460–466.
- Preprint
 - Virial identity, local virial identity and their applications.
 - (with N. Basharat and S. Zheng) Threshold for NLS with rotation in two dimensions.
- In Preparation
 - LWP for NLS with magnetic potentials.
 - (with M. Tohaneanu) GWP for the quantum super oscillator.

Journals Refereed

- *Illinois J. Math.*
- *J. Number Theory*

Conference/Workshop Presentations

- “Some blow-up rates of solutions to nonlinear Schrödinger equations with rotations”
2017 Joint Mathematics Meetings
Marriott Atlanta Marquis, Atlanta, GA (Jan 7, 2017)
- “Bounds for blowup solutions to nonlinear Schrödinger equations in two dimensions”
2017 Joint Mathematics Meetings
Hyatt Regency Atlanta, Atlanta, GA (Jan 5, 2017)
- “Sharp condition on global well-posedness for nonlinear Schrödinger equations with rotation”
SEARCDE 2016
Florida Gulf Coast University, Fort Myers, FL (Nov 5, 2016)
(Travel support \$600 by organizers)
- “Fourier restriction and exponential sum estimates”
Integers Conference 2016
University of West Georgia, Carrollton, GA (Oct 8, 2016)

- “Sharp condition on global well-posedness for nonlinear Schrödinger equations with rotation”
AMS Spring Southeastern Sectional Meeting
University of Georgia, Athens, GA (Mar 6, 2016)
- “Discrete Fourier restriction associated with some dispersive equations on torus”
AMS Western Spring Sectional Meeting
University of New Mexico, Albuquerque, NM (Apr 5, 2014)
- “Discrete Fourier restriction associated with Schrödinger equations”
2014 Joint Mathematics Meetings
Baltimore Convention Center, Baltimore, MD (Jan 18, 2014)
- “Bochner-Riesz conjecture, restriction conjecture and oscillatory integral”
Summer School on Geometric and Fourier Analytic Questions in Euclidean Space
University of California Los Angeles, Lake Arrowhead, CA (Sept 12 & 14, 2011)
(Hotel and dining expenses covered by organizers)

Colloquium/Seminar Presentations

- “Ham-Sandwich theorem”
Analysis Seminar
Georgia Southern University, Statesboro, GA (Nov 21, 2013)
- “Polynomial method in the proof of Szemerédi-Trotter theorem”
Analysis Seminar
Georgia Southern University, Statesboro, GA (Oct 22, 2013)
- “Repeated angles estimate”
Discrete Math Seminar
Georgia Southern University, Statesboro, GA (Sept 16, 2013)
- “Discrete Fourier restriction phenomenon and related problems”
Department Colloquium
Georgia Southern University, Statesboro, GA (Aug 30, 2013)
- “Discrete Fourier restriction phenomenon associated with some periodic nonlinear dispersive equations”
Department Colloquium
Georgia Southern University, Statesboro, GA (Oct 19, 2012)
- “Discrete Fourier restriction phenomenon and associated dispersive equations”
Short Talks by Postdoctoral Members
Institute for Advanced Studies, Princeton, NJ (Sept 28, 2012)
- “The discrete Fourier restriction phenomenon associated with Schrödinger and KdV equations”
Analysis Seminar
Indiana University Bloomington, Bloomington, IN (Feb 9, 2012)
- “Discrete Fourier restriction associated with Schrödinger and KdV type equations”
Harmonic Analysis and Differential Equations Seminar
University of Illinois at Urbana-Champaign, Urbana, IL (Nov 8, 2011)

- “Periodic nonlinear Schrödinger equation”
Graduate Analysis Seminar
University of Illinois at Urbana-Champaign, Urbana, IL (Oct 23, 2009)

Master Student Advised

- Isaac Voegtle (Present)
- Nyla Basharat (2016, co-advised with S. Zheng)

Organizer

- Analysis Seminar (2015 – Present)

Teaching Experience

- At Georgia Southern University
 - Math 1232 Survey of Calculus
 - Math 1441 Calculus I
 - Math 2242 Calculus II
 - Math 2331 Elementary Linear Algebra
 - Math 3230 Ordinary Differential Equations
 - Math 5331 Analysis I
 - Math 7236 Advanced Ordinary Differential Equations
 - Math 7331 Real Analysis
 - Math 7890 Stochastic Differential Equations (Directed Study)
 - Math 7890 Complex Analysis (Directed Study)
 - Math 7890 Topics in Real Analysis (Directed Study)
 - Math 7890 A Study in Fractals (Directed Study)
- At University of Illinois at Urbana-Champaign
 - Math 181 A Mathematical World
 - Math 220 Calculus (Teaching Assistant)
 - Math 231 Calculus II (Teaching Assistant)
 - Math 234 Calculus for Business I (Teaching Assistant)
 - Math 241 Calculus III (Teaching Assistant)

Service

- Department

- Advisory Council (2016 – Present)
- Colloquium Committee (2013 – 2014)
- Course and Curriculum Committee (2013 – Present)
- Graduate Coordinating Committee (2014 – Present)
- Grants and Scholarships Committee (2015 – Present)
- Search Committee (2015 – Present)
- College
 - College Office of Undergraduate Research (2017 – Present)
- University
 - Faculty Senate (2015 – Present)
 - Gateways to Completion (2017 – Present)
 - Undergraduate Research Council (2015 – Present)