

Jingni Xiao

Research Interests

Inverse problems, partial differential equations, scattering and inverse scattering, non-scattering phenomena, and nonlocal operators.

Employment

- Assistant Professor, Department of Mathematics, Drexel University, 2022 – present
- Hill Assistant Professor, Department of Mathematics, Rutgers University - New Brunswick, 2018 – 2022.

Mentors: Professor Fioralba Cakoni and Professor Michael Vogelius

Partially supported by NSF Grant DMS-12-11330 (PI: Michael Vogelius), Sep 2020 – Jun 2021

Education

Ph.D. in Mathematics, Hong Kong Baptist University, Hong Kong SAR, China 2018.
Advisor: Professor Hongyu Liu.

– Yakun Scholarship for Mainland Postgraduate Students, 2016–2017.

M.S. in Mathematics, Central South University, China, 2015.
Advisor: Professor Siqing Gan.

B.S. in Mathematics, Central South University, China, 2012.
Thesis Advisor: Professor Siqing Gan.

– Exchange student at Shan Dong University, China, 2010–2011.

Publications

1. Jingni Xiao. A new type of CGO solutions and its applications in corner scattering. *Inverse Problems*, 38(3):034001, 2022
2. Michael Vogelius and Jingni Xiao. Finiteness results concerning nonscattering wave numbers for incident plane and Herglotz waves. *SIAM Journal on Mathematical Analysis*, 53(5):5436–5464, 2021
3. Fioralba Cakoni and Jingni Xiao. On corner scattering for operators of divergence form and applications to inverse scattering. *Communications in Partial Differential Equations*, 46(3):413–441, 2021

4. Emilia Blåsten, Hongyu Liu, and Jingni Xiao. On an electromagnetic problem in a corner and its applications. *Analysis & PDEs*, 14(7):2207–2224, 2021
5. Fioralba Cakoni, Shixu Meng, and Jingni Xiao. A note on transmission eigenvalues in electromagnetic scattering theory. *Inverse Problems & Imaging*, 15(5):999–1014, 2021
6. Hongyu Liu, Luca Rondi, and Jingni Xiao. Mosco convergence for $H(\text{curl})$ spaces, higher integrability for Maxwell's equations, and stability in direct and inverse EM scattering problems. *Journal of the European Mathematical Society (JEMS)*, 21(10):2945–2993, 2019
7. Junjiang Lai, Hongyu Liu, Jingni Xiao, and Yifeng Xu. The decoupling of elastic waves from a weak formulation perspective. *East Asian Journal on Applied Mathematics*, 9(2):241–251, 2019
8. Tuhin Ghosh, Yi-Hsuan Lin, and Jingni Xiao. The Calderón problem for variable coefficients nonlocal elliptic operators. *Communications in Partial Differential Equations*, 42(12):1923–1961, 2017
9. Hongyu Liu and Jingni Xiao. Decoupling elastic waves and its applications. *Journal of Differential Equations*, 263(8):4442–4480, 2017
10. Hongyu Liu and Jingni Xiao. On electromagnetic scattering from a penetrable corner. *SIAM Journal on Mathematical Analysis*, 49(6):5207–5241, 2017
11. Hongyu Liu, Michele Petrini, Luca Rondi, and Jingni Xiao. Stable determination of sound-hard polyhedral scatterers by a minimal number of scattering measurements. *Journal of Differential Equations*, 262(3):1631–1670, 2017

Grants

- AMS-Simons Travel Grant (\$4,000), 2019

Other Research Experience

Visiting Positions

- Visitor, CMAP, Ecole Polytechnique, France, Jun – Jul 2019.
Host: Professor Housseem Hadar
- Visitor, Department of Mathematics, University of Washington, USA, Apr – Aug 2017.
Host: Professor Gunther Uhlmann
- Research Assistant, Hong Kong Baptist University Institute of Research, China, Oct 2014 – Aug 2015.
Host: Professor Hongyu Liu

- Visitor, Department of Mathematics, Southern University of Science and Technology, China, Mar – Apr 2014 and Jun – Jul 2013.
Host: Professor Jingzhi Li

Invited Talks

- The 11th Applied Inverse Problems (AIP) Conference, *Göttingen, Germany*, Sep 4–8, 2023.
- Special Session on Inverse Problems, The 29th Nordic Congress of Mathematicians with European Mathematical Society, *Aalborg, Denmark*, Jul 3–7, 2023.
- Special Session on Mathematical Methods for Inverse Problems, The AMS Spring Central Sectional Meeting, *Purdue University, USA*, Mar 26–27, 2022.
- 2021 Minjiang Workshop on Applied and Computational Mathematics, *Minjiang University, China*, Dec 25–26, 2021.
- Special Section on Recent Advances in Inverse Problems for PDEs, The AMS Fall Western Virtual Sectional Meeting, Oct 23–24, 2021.
- Inverse Problems Seminar, *UC Irvine, USA*, Oct 21, 2021.
- Invited talk, *Northeast Normal University, China*, Dec 2, 2020.
- Applied and Computational Math Seminar, *Rutgers University, USA*, Nov 8, 2019.
- Spectral and Scattering Theory Seminar, *Purdue University, USA*, Oct 14, 2019.
- Inverse Problems and Analysis Seminar, *University of Delaware, USA*, Sep 17, 2019.
- The 10th Applied Inverse Problems (AIP) Conference, *Grenoble, France*, Jul 8–12, 2019.
- Invited talk, *Ecole Polytechnique, France*, Jun 19, 2019
- Three invited lectures, *Central South University, China*, Jun 3–4, 2019.
- IAS Workshop on Inverse Problems, Imaging and PDEs, *HKUST, Hong Kong SAR*, May 20–24, 2019.
- Young Scholars Workshop on Inverse Problems, Imaging and PDEs, *Shenzhen, China*, Jan 13–14, 2018.
- The 9th Applied Inverse Problems Conference, *Hangzhou, China*, May 29 – Jun 2, 2017.
- Inverse Problems Seminar, *University of Washington, USA*, May 3, 2017.
- Young Scholars Workshop on Inverse Problems, Imaging and PDEs, *Shenzhen, China*, Mar 25–27, 2017.

- IAS Workshop on Inverse Problems, Imaging and PDEs, *HKUST, Hong Kong SAR*, Dec 5–9, 2016.
- The 2nd East Asia Section of IPIA-Young Scholars Symposium, *Taiwan*, Nov 5–6, 2016.
- Seminar of IAS Program on Inverse Problems, Imaging and Partial Differential Equations, *HKUST, Hong Kong SAR*, Oct 12, 2016.

Referee for Journals

- SIAM Journal on Mathematical Analysis
- Transactions of the American Mathematical Society
- Research in the Mathematical Sciences
- Inverse Problems and Imaging
- Electronic Research Archive
- East Asian Journal on Applied Mathematics

Teaching Experience

Rutgers University

Spring 2022	Math 421:	<i>Advanced Calculus for Engineering</i>
Fall 2021	Math 421:	<i>Advanced Calculus for Engineering</i>
	Math 423:	<i>Elementary Partial Differential Equations</i>
Spring 2021	Math 423:	<i>Elementary Partial Differential Equations</i>
Fall 2020	Math 250:	<i>Introductory Linear Algebra</i>
Spring 2020	Math 250:	<i>Introductory Linear Algebra</i>
	Math 421:	<i>Advanced Calculus for Engineering</i>
Fall 2018	Math 350:	<i>Linear Algebra</i>
Spring 2019	Math 244:	<i>Differential Equations</i>
Fall 2018	Math 244:	<i>Differential Equations</i>

Hong Kong Baptist University (Teaching Assistant)

Jan - May 2018	Math 3605:	<i>Numerical Methods II</i>
Sep - Dec 2017	Math 2205:	<i>Multivariate Calculus</i>
Jan - Mar 2017	Math 1005:	<i>Calculus</i>
Sep - Dec 2016	Math 3206:	<i>Numerical Methods</i>
Jan - May 2016	Math 2215:	<i>Mathematical Analysis</i>
Sep - Dec 2015	Math 3206:	<i>Numerical Methods</i>

Central South University (Teaching Assistant)

Feb - Jun 2013 *Mathematical Analysis*
Sep 2012 - Jan 2013 *Linear Algebra*

Last updated: July 2022