

Kevin Ren

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Education

Princeton University PhD student in Mathematics Advisor: Assaf Naor	2022-present
Massachusetts Institute of Technology Bachelor of Science in Mathematics and Physics	2018-2022

Publications and Preprints

Geometric Measure Theory and Harmonic Analysis

1. *An incidence estimate and a Furstenberg type estimate for tubes in the plane* (joint with Yuqiu Fu and Shengwen Gan). **J Fourier Anal Appl**, **28**, 59 (2022)
2. *Incidence estimates for α -dimensional tubes and β -dimensional balls in the plane* (joint with Yuqiu Fu). arxiv preprint: 2111.05093. Accepted by **J Fractal Geometry**.
3. *Sobolev extension in a simple case* (joint with Marjorie Drake, Charles Fefferman, and Anna Skorobogatova). arxiv preprint: 2402.11731
4. *Weighted refined decoupling estimates and application to Falconer distance set problem* (joint with Xiumin Du, Yumeng Ou, and Ruixiang Zhang). arxiv preprint: 2309.04501
5. *New improvement to Falconer distance set problem in higher dimensions* (joint with Xiumin Du, Yumeng Ou, and Ruixiang Zhang). arxiv preprint: 2309.04103
6. *Discretized Radial Projections in \mathbb{R}^d* . arxiv preprint: 2309.04097
7. *Furstenberg sets estimate in the plane* (joint with Hong Wang). arxiv preprint: 2308.08819
8. *A note on maximal operators for the Schrödinger equation on the torus* (joint with Yuqiu Fu, Haoyu Wang). arxiv preprint: 2307.12870

Combinatorics

1. *Topology of Augmented Bergman Complexes* (joint with Elisabeth Bullock, Aidan Kelley, Victor Reiner, Gahl Shemy, Dawei Shen, Brian Sun, Amy Tao, Zhichun Joy Zhang). **Electronic Journal of Combinatorics**, p. 1-31 (2022)
2. *%-Immanants and Temperley-Lieb Immanants* (joint with Frank Lu, Dawei Shen, Siki Wang). arxiv preprint: 2303.17004
3. *Extending the Graph Formalism to Higher-Order Gates* (joint with Andrey Boris Khesin). arxiv preprint: 2108.02686

Honors and Awards

NSF GRFP fellowship

2022-2027

Invited Talks

Northwestern Analysis Seminar

Apr 2024

AMS Spring Central Sectional Meeting

Apr 2024

UCLA Department Colloquium

Apr 2024

UPenn Analysis Seminar

Feb 2024

Workshop in Analysis at Georgia Institute of Technology

Dec 2023

Berkeley Analysis Seminar

Oct 2023

University of British Columbia Analysis Seminar

Oct 2023

Online Analysis Research Seminar

Sept 2023

Harmonic Analysis and Fractal Sets conference at Ohio State University

Mar 2023

Princeton Graduate Student Seminar

Oct 2022

Joint Mathematics Meetings AMS/PME student poster session

Jan 2022