Yunfeng Zhang - Curriculum Vitae

Contact Information

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Research Interests

Harmonic analysis on Lie groups and homogeneous spaces, classical Fourier analysis, analytic number theory and dispersive equations; concentration of eigenfunctions of the Laplace–Beltrami operator

Academic Appointments

Visiting Assistant Professor, University of Cincinnati 2024 - now
TAL Assistant Professor, Peking University 2021 - 2024
Assistant Research Professor, University of Connecticut 2018 - 2021

Education

Ph.D. in Mathematics, UCLA 2012 - 2018
Advisors: Rowan Killip and Monica Visan

B.S. in Mathematics, Tsinghua University 2008 - 2012

Honors and awards

UCLA Mathematics Graduate Research Presentation Prize 2018
Tsinghua University Outstanding Graduate Award 2012
Fellowship in the Talents Program of Tsinghua University 2009 - 2012

Grants

Co-PI, National Key R&D Program of China (PI: Hanlong Fang) 2022 - 2024
Title: Geometry and Analysis on Homogeneous Spaces
Total value: 3,000,000 CNY

PI, Fundamental Research Funds for the Central Universities, Peking University 2021 - 2023
Title: Analysis on Lie Groups
Total value: 200,000 CNY

Preprints

7. Bounds of restriction of characters to submanifolds
   Preprint, submitted. arXiv:2402.03178

6. Harmonic analysis on the fourfold cover of the space of ordered triangles
   (with Hanlong Fang and Xiaocheng Li) Preprint, submitted. arXiv:2301.00529

Journal Publications

5. On Fourier restriction type problems on compact Lie groups
   Indiana University Mathematics Journal 72 (2023), No. 6, 2631-2699, 69 pp. arXiv:2005.11451

4. Schrödinger equations on compact globally symmetric spaces
   The Journal of Geometric Analysis 31 (2021), No. 11, 10778-10819, 42 pp. arXiv:2005.00429

3. Strichartz estimates for the Schrödinger equation on products of odd-dimensional spheres
   Nonlinear Analysis 199 (2020), 112052, 21 pp. arXiv:2301.02823

2. Strichartz estimates for the Schrödinger flow on compact Lie groups
   Analysis & PDE 13 (2020), No. 4, 1173-1219, 47 pp. arXiv:1703.07548

Conference Papers

1. Analysis on compact symmetric spaces: eigenfunctions and nonlinear Schrödinger equations
   In: Ghent Methusalem Colloquium 2021, Trends in Mathematics (2024), Birkhäuser.

Invited Talks

Special Session on Harmonic Analysis and Hamiltonian PDEs
Joint Meeting of the NZMS, AustMS and AMS, University of Auckland — December 2024

"Bounds of restriction of characters to submanifolds"
Analysis Seminar, Southern University of Science and Technology — June 2024

"The modified KdV in modulation spaces: conservation laws and equicontinuity of solutions"
Seminar, Beijing Institute of Technology — June 2024

"Bounds of restriction of characters to submanifolds"
Analysis Seminar, University of Wisconsin–Madison — May 2024

"Bounds of restriction of characters to submanifolds"
Seminar, Beijing Institute of Technology — January 2024

"Harmonic analysis on compact symmetric spaces"
Global Young Scholars Forum, Beijing Normal University — December 2023

"L^p norms of Laplacian eigenfunctions on compact symmetric spaces"
Young Scholars Forum, ShanghaiTech University — December 2023

"L^p norms of Laplacian eigenfunctions on compact symmetric spaces"
Young Mathematician Forum, Shanghai Jiao Tong University — December 2023

"Harmonic analysis on compact symmetric spaces"
Vision Forum for International Young Scholars, Beihang University — December 2023

"L^p norms of Laplacian eigenfunctions on compact symmetric spaces"
Global Forum for Young Mathematicians, SUSTech — November 2023

"L^p norms of Laplacian eigenfunctions on compact Lie groups"
Teli Forum for International Young Scholars, Beijing Institute of Technology — November 2023

"Discrete Fourier restriction and the Kloosterman circle method"
Colloquium, Huaibei Normal University — September 2023

"Fourier restriction type problems on compact Lie groups "
Seminar, Beijing Institute of Technology — September 2023

"Nonlinear Schrödinger equation on compact symmetric spaces"
Methusalem Seminar, Ghent University — November 2021

"Fourier restriction bounds on compact symmetric spaces"
Conference on Harmonic Analysis and Symmetric Spaces — October 2021

"Strichartz estimate for the Schrödinger equation on compact globally symmetric spaces"
Oberseminar Analysis, Bielefeld University — April 2021

"Schrödinger equations on compact globally symmetric spaces"
Weekly Seminar on Geometric and Functional Inequalities and Applications — February 2021

"Size of Laplacian eigenfunctions on compact symmetric spaces"
AMS Sectional Meeting on Geometric Inequalities and Nonlinear PDEs — September 2020

"Strichartz estimates for the Schrödinger equation on compact symmetric spaces"
AMS Sectional Meeting on Analysis on Homogeneous Spaces — March 2020

Service

Referee for research journals including *Journal of Functional Analysis*, *Selecta Mathematica* and *Transactions of the American Mathematical Society*

Co-organizer of the Analysis and Probability Seminar at the University of Connecticut, Fall 2020 and Spring 2021

Reviewer for Mathematical Reviews and zbMATH Open

Teaching Experience

As Instructor –

Linear Algebra B ("B" stands for "for the Physical Sciences"), Peking University	Fall 2023
Linear Algebra B, Peking University	Fall 2022
Advanced Mathematics B (i.e. Calculus for the Physical Sciences), Peking University	Fall 2021
Partial Differential Equations (two classes), University of Connecticut	Spring 2021
Partial Differential Equations (two classes), University of Connecticut	Fall 2020
Axiomatic Geometry (two classes), University of Connecticut	Spring 2020
Introduction to Complex Variables (two classes), University of Connecticut	Fall 2019
Partial Differential Equations (two classes), University of Connecticut	Spring 2019
Honors Calculus II, University of Connecticut	Fall 2018
Honors Multivariable Calculus, University of Connecticut	Fall 2018
Calculus for Life Sciences Students II, UCLA	Summer 2017

As Teaching Assistant –

Probability Theory II, UCLA	Spring 2018, Spring 2017, Winter 2017, Winter 2016
Algebra for Applications, UCLA	Winter 2018
Analysis I, UCLA	Fall 2017, Winter 2016, Fall 2015
Probability Theory I, UCLA	Winter 2017, Winter 2015
Differential and Integral Calculus, UCLA	Fall 2016
Linear & Nonlinear Systems of Differential Equations, UCLA	Fall 2015, Spring 2015, Winter 2014
Mathematical Game Theory, UCLA	Summer 2015
Partial Differential Equations, UCLA	Spring 2015
Discrete Structures, UCLA	Winter 2015
Precalculus, UCLA	Fall 2014, Fall 2012
Calculus for Life Sciences Students I, UCLA	Fall 2014
Linear Algebra I, UCLA	Summer 2014
Differential Geometry II, UCLA	Spring 2014
Ordinary Differential Equations, UCLA	Spring 2014, Winter 2014
Integration and Infinite Series, UCLA	Fall 2013
Complex Analysis for Applications, UCLA	Spring 2013
Differential Equations, UCLA	Winter 2013

Reference

Rowan Killip	killip@math.ucla.edu
Simon Marshall	marshall@math.wisc.edu
Ambar Sengupta	ambar.sengupta@uconn.edu
Terence Tao	tao@math.ucla.edu
Monica Visan	visan@math.ucla.edu