Yunfeng Zhang - Curriculum Vitae

Contact Information

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University of Cincinnati
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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-I, National Key R&D Program of China (PI: Hanlong Fang) 2022 - 2024
Title: Geometry and Analysis of 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. Global well-posedness of mKdV in modulation spaces
(with Saikatul Haque, Rowan Killip and Monica Visan) Preprint.
6. Bounds of restriction of characters to submanifolds
Preprint, submitted. arXiv:2402.03178
5. 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

4. On Fourier restriction type problems on compact Lie groups
Indiana University Mathematics Journal 72 (2023), No. 6, 2631-2699, 69 pp. arXiv:2005.11451
3. Schrödinger equations on compact globally symmetric spaces
The Journal of Geometric Analysis 31 (2021), No. 11, 10778-10819, 42 pp. arXiv:2005.00429
2. Strichartz estimates for the Schrödinger equation on products of odd-dimensional spheres
Nonlinear Analysis 199 (2020), 112052, 21 pp. arXiv:2301.02823
1. Strichartz estimates for the Schrödinger flow on compact Lie groups
Analysis & PDE 13 (2020), No. 4, 1173-1219, 47 pp. arXiv:1703.07548

Survey Papers

1. Analysis on compact symmetric spaces: eigenfunctions and nonlinear Schrödinger equations
In: Methusalem Lectures, Trends in Mathematics (2024), vol 3, Birkhäuser, Cham.

Talks

AMS Sectional Meeting on Recent Trends in Harmonic Analysis and PDE — March 2025

NZMS+AustMS+AMS Sectional Meeting on Harmonic Analysis and Hamiltonian PDEs — Dec. 2024

"Semiclassical fun with SU(3)"
Analysis Seminar, University of Cincinnati — September 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, UW–Madison — 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, UConn — 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

– Calculus I (two sections), University of Cincinnati	Spring 2025
– College Algebra (two sections), University of Cincinnati	Fall 2024
– 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
Terence Tao	tao@math.ucla.edu
Monica Visan	visan@math.ucla.edu