

Yunfeng Zhang – Curriculum Vitae

CONTACT INFORMATION	Department of Mathematical Sciences University of Cincinnati Cincinnati, OH 45221-0025	phone: 513-556-4088 email: zhang8y7@ucmail.uc.edu homepage: yunfengzhang108.github.io
RESEARCH INTERESTS	Dispersive PDE, Euclidean Harmonic Analysis, Analytic Number Theory: in particular, Strichartz estimate for the Schrödinger equation, bound of eigenfunctions of the Laplace–Beltrami operator, global dynamics of dispersive completely integrable partial differential equations; Harmonic Analysis on Lie Groups, Representation Theory: in particular, asymptotic bounds of spherical functions and joint eigenfunctions on symmetric spaces	
EDUCATION	Ph.D. in Mathematics, University of California, Los Angeles – Advisors: Rowan Killip and Monica Visan B.S. in Mathematics, Tsinghua University	2012 – 2018 2008 – 2012
ACADEMIC APPOINTMENTS	Visiting Assistant Professor, University of Cincinnati TAL Assistant Professor, Peking University Assistant Research Professor, University of Connecticut	2024 – 2021 – 2024 2018 – 2021
HONORS AND AWARDS	UCLA Mathematics Graduate Research Presentation Prize Tsinghua University Outstanding Graduate Award Fellowship in the Tsinghua Xuetaang Mathematics Program	2018 2012 2009 – 2012
GRANTS	Co-I, National Key R&D Program of China (PI: Hanlong Fang) Title: Geometry and Analysis of Homogeneous Spaces PI, Fundamental Research Funds for the Central Universities, Peking University Title: Analysis on Lie Groups	2022 – 2024 2021 – 2023
RESEARCH PUBLICATIONS	<ol style="list-style-type: none"> 1. Strichartz estimates for the Schrödinger flow on compact Lie groups <i>Analysis & PDE</i> 13 (2020), No. 4, 1173-1219 (47 pp). arXiv:1703.07548 2. Strichartz estimates for the Schrödinger equation on products of odd-dimensional spheres <i>Nonlinear Analysis</i> 199 (2020), 112052, 21 pp. arXiv:2301.02823 3. Schrödinger equations on compact globally symmetric spaces <i>The Journal of Geometric Analysis</i> 31 (2021), No. 11, 10778-10819 (42 pp). arXiv:2005.00429 4. On Fourier restriction type problems on compact Lie groups <i>Indiana University Mathematics Journal</i> 72 (2023), No. 6, 2631-2699 (69 pp). arXiv:2005.11451 5. (with Saikatul Haque, Rowan Killip and Monica Visan) Global well-posedness and equicontinuity for modified Korteweg–de Vries equations in modulation spaces <i>Pure and Applied Analysis</i> 7 (2025), No. 3, 615-637 (23 pp). arXiv:2411.05300 6. Bounds of restriction of characters to submanifolds <i>Mathematische Zeitschrift</i>, accepted. arXiv:2402.03178 	
RESEARCH PREPRINTS	<ol style="list-style-type: none"> 7. (with Yangkendi Deng and Zehua Zhao) Sharp bilinear eigenfunction estimate, $L_{x_2}^\infty L_{t,x_1}^p$-type Strichartz estimate, and energy critical NLS Preprint. arXiv:2509.09565 8. Local well-posedness for nonlinear Schrödinger equations on compact product manifolds Preprint. arXiv:2503.09442 	

9. (with Hanlong Fang and Xiaocheng Li) Algebraic and analytic properties of invariant differential operators on a homogeneous space of complexity 1
Preprint. arXiv:2301.00529
10. (with Saikatul Haque, Rowan Killip and Monica Visan) Growth of Fourier–Lebesgue norms for mKdV
Preprint.

EXPOSITORY
PUBLICATIONS

1. Analysis on compact symmetric spaces: eigenfunctions and nonlinear Schrödinger equations
In: Methusalem Lectures, Trends in Mathematics vol. 3 (2024), 235-240, Birkhäuser, Cham.

INVITED TALKS

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| “Well-posedness of NLS on $\mathbb{R} \times \mathbb{S}^3$ ”
Analysis Seminar, Bielefeld University | Oct. 2025 |
| “On NLS posed on $\mathbb{R} \times \mathbb{S}^3$ ”
Workshop on Dispersive PDEs and Control Theory, Beijing Institute of Technology | Jun. 2025 |
| “Bounds of restriction of characters to submanifolds”
Tsinghua University | May 2025 |
| “The modified KdV equation beyond Sobolev spaces”
Analysis Seminar, University of Cincinnati | Apr. 2025 |
| “Bounds of restriction of characters to submanifolds”
AMS Sectional Meeting on Recent Trends in Harmonic Analysis and PDE, U. of Kansas | Mar. 2025 |
| “Multi-linear multi-parameter eigenfunction bounds and NLS on compact manifolds”
Beijing Institute of Technology | Mar. 2025 |
| “On the modified KdV equation in modulation spaces”
Joint Meeting of the NZMS, AustMS and AMS: Special Sessions, University of Auckland | Dec. 2024 |
| “Semiclassical fun with $SU(3)$ ”
Prairie Analysis Seminar 2024, University of Kansas | Oct. 2024 |
| “Semiclassical fun with $SU(3)$ ”
Analysis Seminar, University of Cincinnati | Sep. 2024 |
| “Bounds of restriction of characters to submanifolds”
Analysis Seminar, Southern University of Science and Technology | Jun. 2024 |
| “The modified KdV in modulation spaces: conservation laws and equicontinuity of solutions”
Beijing Institute of Technology | Jun. 2024 |
| “Bounds of restriction of characters to submanifolds”
Analysis Seminar, University of Wisconsin–Madison | May 2024 |
| “Bounds of restriction of characters to submanifolds”
Beijing Institute of Technology | Jan. 2024 |
| “Harmonic analysis on compact symmetric spaces”
Global Young Scholars Forum, Beijing Normal University | Dec. 2023 |
| “ L^p norms of Laplacian eigenfunctions on compact symmetric spaces”
Young Scholars Forum, ShanghaiTech University | Dec. 2023 |
| “ L^p norms of Laplacian eigenfunctions on compact symmetric spaces”
Young Mathematician Forum, Shanghai Jiao Tong University | Dec. 2023 |
| “Harmonic analysis on compact symmetric spaces”
Vision Forum for International Young Scholars, Beihang University | Dec. 2023 |
| “ L^p norms of Laplacian eigenfunctions on compact symmetric spaces”
Global Forum for Young Mathematicians, SUSTech | Nov. 2023 |

	<p>“L^p norms of Laplacian eigenfunctions on compact Lie groups” Teli Forum for International Young Scholars, Beijing Institute of Technology</p> <p>“Discrete Fourier restriction and the Kloosterman circle method” Colloquium, Huaibei Normal University</p> <p>“Fourier restriction type problems on compact Lie groups ” Beijing Institute of Technology</p> <p>“Nonlinear Schrödinger equation on compact symmetric spaces” Methusalem Junior Analysis & PDE Seminar, Ghent University</p> <p>“Fourier restriction bounds on compact symmetric spaces” Conference on Harmonic Analysis and Symmetric Spaces, UW–Madison</p> <p>“Strichartz estimate for the Schrödinger equation on compact globally symmetric spaces” Oberseminar Analysis, Bielefeld University</p> <p>“Schrödinger equations on compact globally symmetric spaces” Weekly Seminar on Geometric and Functional Inequalities and Applications, UConn</p> <p>“Size of Laplacian eigenfunctions on compact symmetric spaces” AMS Sectional Meeting on Geometric Inequalities and Nonlinear PDEs, UTEP</p> <p>“Strichartz estimates for the Schrödinger equation on compact symmetric spaces” AMS Sectional Meeting on Analysis on Homogeneous Spaces, Tufts U. (Cancelled over Covid)</p>	<p>Nov. 2023</p> <p>Sep. 2023</p> <p>Sep. 2023</p> <p>Nov. 2021</p> <p>Oct. 2021</p> <p>Apr. 2021</p> <p>Feb. 2021</p> <p>Sep. 2020</p> <p>Mar. 2020</p>
MENTORING	An Nguyen, undergraduate student at the University of Cincinnati	2025 –
SERVICE AND OUTREACH	<p>Referee for:</p> <ul style="list-style-type: none"> – <i>Beijing Journal of Pure and Applied Mathematics</i> – <i>Bulletin of the London Mathematical Society</i> – <i>Communications on Pure and Applied Analysis</i> – <i>Journal of Functional Analysis</i> – <i>Journal of Pseudo-Differential Operators and Applications</i> – <i>Selecta Mathematica</i> (quick opinion) – <i>Transactions of the American Mathematical Society</i> <p>Co-organizer of the Analysis and Probability Seminar at the U. of Connecticut, Fall 2020 and Spring 2021</p> <p>Reviewer for Mathematical Reviews and zbMATH Open</p> <p>Judge for the 40th Annual UC Math Bowl, a high school and middle school math contest</p>	
TEACHING EXPERIENCE	<p>As Instructor:</p> <ul style="list-style-type: none"> – Calculus II (two sections), University of Cincinnati – Pre Calculus, University of Cincinnati – Calculus I, University of Cincinnati – Applied Calculus I, University of Cincinnati – College Algebra (two sections), University of Cincinnati – Linear Algebra B (“B” stands for “for the Physical Sciences”), Peking University – Linear Algebra B, Peking University – Advanced Mathematics B (i.e. Calculus for the Physical Sciences), Peking University – Partial Differential Equations (two classes), University of Connecticut – Partial Differential Equations (two classes), University of Connecticut – Axiomatic Geometry (two classes), University of Connecticut – Introduction to Complex Variables (two classes), University of Connecticut – Partial Differential Equations (two classes), University of Connecticut – Honors Calculus II, University of Connecticut 	<p>Fall 2025</p> <p>Fall 2025</p> <p>Spring 2025</p> <p>Spring 2025</p> <p>Fall 2024</p> <p>Fall 2023</p> <p>Fall 2022</p> <p>Fall 2021</p> <p>Spring 2021</p> <p>Fall 2020</p> <p>Spring 2020</p> <p>Fall 2019</p> <p>Spring 2019</p> <p>Fall 2018</p>

- 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