

# Yunfeng Zhang – Curriculum Vitae

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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	<b>Dispersive Partial Differential Equations, Euclidean Harmonic Analysis, Analytic Number Theory:</b> in particular, Strichartz estimate for the Schrödinger equation, bound of eigenfunctions of the Laplace–Beltrami operator, global dynamics of dispersive completely integrable equations <b>Harmonic Analysis on Lie Groups, Representation Theory:</b> 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	1. Strichartz estimates for the Schrödinger flow on compact Lie groups <i>Analysis &amp; PDE</i> 13 (2020), No. 4, 1173-1219 (47 pages). arXiv:1703.07548 2. Schrödinger equations on compact globally symmetric spaces <i>Journal of Geometric Analysis</i> 31 (2021), No. 11, 10778-10819 (42 pages). arXiv:2005.00429 3. On Fourier restriction type problems on compact Lie groups <i>Indiana University Mathematics Journal</i> 72 (2023), No. 6, 2631-2699 (69 pages). arXiv:2005.11451 4. Strichartz estimates for the Schrödinger equation on products of odd-dimensional spheres <i>Nonlinear Analysis</i> 199 (2020), Article ID 112052 (21 pages). arXiv:2301.02823 5. Bounds of restriction of characters to submanifolds <i>Mathematische Zeitschrift</i> 312 (2026), No. 1, Article No. 13 (35 pages). arXiv:2402.03178 6. (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 pages). arXiv:2411.05300	
RESEARCH PREPRINTS	7. (with Yangkendi Deng and Zehua Zhao) Sharp bilinear eigenfunction estimate, anisotropic 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. arxiv:2511.17471
11. Restriction of eigenfunctions on products of spheres to submanifolds of maximal flats  
Preprint. arXiv:2511.14615

EXPOSITORY  
PUBLICATIONS

1. Analysis on compact symmetric spaces: eigenfunctions and nonlinear Schrödinger equations  
In: Trends in Mathematics, Research Perspectives Ghent Analysis and PDE Center 3 (2024), 235-240.

INVITED TALKS

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| “Well-posedness of the energy-critical NLS on $\mathbb{R} \times \mathbb{S}^3$ ”<br>Beijing Institute of Technology                        | Nov. 2025 |
| “Well-posedness of the energy-critical NLS on $\mathbb{R} \times \mathbb{S}^3$ ”<br>Analysis Seminar, Bielefeld University                 | Oct. 2025 |
| “On NLS posed on $\mathbb{R} \times \mathbb{S}^3$ ”<br>Workshop on Dispersive PDEs and Control Theory, Beijing Institute of Technology     | Jun. 2025 |
| “Bounds of restriction of characters to submanifolds”<br>Tsinghua University   | May 2025  |
| “The modified KdV equation beyond Sobolev spaces”<br>Analysis Seminar, University of Cincinnati  | Apr. 2025 |
| “Bounds of restriction of characters to submanifolds”<br>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”<br>Beijing Institute of Technology                        | Mar. 2025 |
| “On the modified KdV equation in modulation spaces”<br>Joint Meeting of the NZMS, AustMS and AMS: Special Sessions, University of Auckland | Dec. 2024 |
| “Semiclassical fun with $SU(3)$ ”<br>Analysis Seminar, University of Cincinnati  | Sep. 2024 |
| “Bounds of restriction of characters to submanifolds”<br>Analysis Seminar, Southern University of Science and Technology                   | Jun. 2024 |
| “The modified KdV in modulation spaces: conservation laws and equicontinuity of solutions”<br>Beijing Institute of Technology              | Jun. 2024 |
| “Bounds of restriction of characters to submanifolds”<br>Analysis Seminar, University of Wisconsin–Madison                                 | May 2024  |
| “Bounds of restriction of characters to submanifolds”<br>Beijing Institute of Technology   | Jan. 2024 |
| “Discrete Fourier restriction and the Kloosterman circle method”<br>Colloquium, Huaibei Normal University                                  | Sep. 2023 |
| “Fourier restriction type problems on compact Lie groups ”<br>Beijing Institute of Technology  | Sep. 2023 |
| “Nonlinear Schrödinger equation on compact symmetric spaces”<br>Methusalem Junior Analysis & PDE Seminar, Ghent University                 | Nov. 2021 |
| “Fourier restriction bounds on compact symmetric spaces”<br>Conference on Harmonic Analysis and Symmetric Spaces, UW–Madison               | Oct. 2021 |

	<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>Apr. 2021</p> <p>Feb. 2021</p> <p>Sep. 2020</p> <p>Mar. 2020</p>
CONTRIBUTED TALKS	<p>“Semiclassical fun with <math>SU(3)</math>” Prairie Analysis Seminar 2024, University of Kansas</p> <p>“Harmonic analysis on compact symmetric spaces” Global Young Scholars Forum, Beijing Normal University</p> <p>“<math>L^p</math> norms of Laplacian eigenfunctions on compact symmetric spaces” Young Scholars Forum, ShanghaiTech University</p> <p>“<math>L^p</math> norms of Laplacian eigenfunctions on compact symmetric spaces” Young Mathematician Forum, Shanghai Jiao Tong University</p> <p>“Harmonic analysis on compact symmetric spaces” Vision Forum for International Young Scholars, Beihang University</p> <p>“<math>L^p</math> norms of Laplacian eigenfunctions on compact symmetric spaces” Global Forum for Young Mathematicians, SUSTech</p> <p>“<math>L^p</math> norms of Laplacian eigenfunctions on compact Lie groups” Teli Forum for International Young Scholars, Beijing Institute of Technology</p>	<p>Oct. 2024</p> <p>Dec. 2023</p> <p>Dec. 2023</p> <p>Dec. 2023</p> <p>Dec. 2023</p> <p>Nov. 2023</p> <p>Nov. 2023</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"> <li>– <i>Beijing Journal of Pure and Applied Mathematics</i></li> <li>– <i>Bulletin of the London Mathematical Society</i></li> <li>– <i>Communications on Pure and Applied Analysis</i></li> <li>– <i>Journal of Functional Analysis</i></li> <li>– <i>Journal of Pseudo-Differential Operators and Applications</i></li> <li>– <i>Selecta Mathematica</i> (quick opinion)</li> <li>– <i>Transactions of the American Mathematical Society</i></li> </ul> <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"> <li>– Linear Algebra, University of Cincinnati</li> <li>– Calculus II (two sections), University of Cincinnati</li> <li>– Pre Calculus, University of Cincinnati</li> <li>– Calculus I, University of Cincinnati</li> <li>– Applied Calculus I, University of Cincinnati</li> <li>– College Algebra (two sections), University of Cincinnati</li> <li>– Linear Algebra B (“B” stands for “for the Physical Sciences”), Peking University</li> <li>– Linear Algebra B, Peking University</li> </ul>	<p>Spring 2026</p> <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>

- 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