

Zhipeng Yang

Contact Information

Department of Mathematics
Yunnan Normal University
650500 Kunming, China.

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Personal Information

- Date of Birth March 26, 1993.
- Place of Birth Harbin, Heilongjiang Province, China.
- Citizenship China.

Research Interests

- Geometric Analysis and PDEs.
- Variational Methods.
- Noncommutative Analysis.

Employment

- 2025.09–2027.08: Visiting Professor, Ghent University, Belgium.
Mentor: Prof. Michael Ruzhansky.
- 2025.01–2025.07: Visiting Professor, Harbin Institute of Technology, China.
Mentor: Prof. Quanhua Xu.
- 2024.11–Now : Associate Professor, Yunnan Normal University, China.
- 2022.06–2024.11: Assistant Professor, Yunnan Normal University, China.
- 2019.10–2022.04: Wissenschaftliche Mitarbeiter (TV-L E13), Georg-August Universität Göttingen, Germany.
- 2018.07–2019.06: Visiting Scholar, Yunnan Normal University, China.

Education

- 2019.10–2022.04: Ph.D. Mathematics, Georg-August Universität Göttingen, Germany.
Dissertation: Harmonic analysis on 2-step stratified Lie groups without the Moore-Wolf condition.
Mentor: Prof. Ingo Witt.
- 2015.09–2018.06: M.S. Mathematics, Yunnan Normal University, China.
Dissertation: The existence and concentration of solutions for fractional Schrödinger-Poisson system via variational methods.
Mentor: Prof. Fukun Zhao.
- 2013.09–2014.02: Exchange Student, National Taichung University of Education, Taiwan.
- 2011.09–2015.06: B.S. Mathematics, Harbin Normal University, China.
Mentor: Prof. Renhao Cui.

Publications and Preprints

1. Yongpeng Chen and Zhipeng Yang*
Multiplicity and concentration behavior of solutions for the generalized quasilinear Schrödinger equation with critical growth. *Demonstr. Math.* **58**, no. 1, Paper No. 20250164, 2025.
2. Yongpeng Chen and Zhipeng Yang*
Multiple positive solutions for the generalized quasilinear Schrödinger equation in R^N . *Acta Math. Sci. Ser. B (Engl. Ed.)* **45**, no. 5, 2010–2028, 2025.
3. Jiao Luo, Zhipeng Yang*, Anbiao Zeng and Ling Zhu
Fractional Schrödinger–Poisson system involving concave and convex nonlinearities. *Z. Anal. Anwend.* **44**, no. 1–2, 235–250, 2025.
4. Yongpeng Chen, Zhipeng Yang and Jianjun Zhang*
On the existence of multiple normalized solutions for a class of fractional Choquard equations with mixed nonlinearities. *NoDEA Nonlinear Differential Equations Appl.* **32**, no. 5, Paper No. 83, 26 pp, 2024.
5. Yongpeng Chen and Zhipeng Yang*
Concentration of ground state solutions for critical generalized quasilinear equation with steep potential well. *Math. Methods Appl. Sci.* **49**, no. 1, 397–416, 2024.
6. Quanqing Li and Zhipeng Yang*
Existence of normalized solutions for a Sobolev supercritical Schrödinger equation. *Electron. Res. Arch.* **32**, no. 12, 6761–6771, 2024.
7. Changyang Mu, Zhipeng Yang* and Wei Zhang
Existence and concentration of solutions for a fractional Schrödinger–Poisson system with discontinuous nonlinearity. *Adv. Nonlinear Stud.* **24**, no. 4, 992–1011, 2024.
8. Yongpeng Chen and Zhipeng Yang*
Existence of multi-bump solutions for a nonlinear Kirchhoff equation. *J. Nonlinear Var. Anal.* **8**, 233–248, 2024.
9. Yongpeng Chen and Zhipeng Yang*
The existence of multiple solutions for a class of upper critical Choquard equation in a bounded domain. *Demonstr. Math.* **57**, no. 1, Paper No. 20230152, 2024.
10. Guangze Gu, Changyang Mu and Zhipeng Yang*
Existence of Ground State Solutions for a Class of Non-Autonomous Fractional Kirchhoff Equations. *Fractal and Fractional.* **8**, no. 2, 113, 2024.
11. Guangze Gu, Changyang Mu and Zhipeng Yang*
Existence and multiplicity of solutions for a fractional Schrödinger–Poisson system with subcritical or critical growth. *Qual. Theory Dyn. Syst.* **22**, no. 2, Paper No. 63, 39 pp, 2023.
12. Zhipeng Yang, Hao Zhai* and Fukun Zhao
Existence and multiplicity of normalized solutions for a class of fractional Schrödinger–Poisson equations. *Appl. Math. Lett.* **141**, Paper No. 108596, 8 pp, 2023.
13. Zhipeng Yang*,
Critical Fujita exponent and blow-up results for the Rockland heat equation. *Acta Math. Sci. Ser. A (Chinese Ed.)* **43**, no. 3, 795–807, 2023.
14. Zhipeng Yang*,
A note on the heat kernel for the rescaled harmonic oscillator from step two nilpotent Lie groups. *Acta Math. Sin. (Engl. Ser.)* **38**, no. 9, 1597–1611, 2022.
15. Yongpeng Chen and Zhipeng Yang*,
Existence and asymptotical behavior of multiple solutions for the critical Choquard equation. *J. Geom. Anal.* **32**, no. 9, Paper No. 238, 34 pp, 2022.

16. Zhipeng Yang, Fukun Zhao* and Shunneng Zhao,
Existence and multiplicity of normalized solutions for a class of fractional Schrödinger-Poisson equations. **Annales Fennici Mathematici.** **47**, no. 2, 777–790, 2022.
17. Guangze Gu, Xianyong Yang and Zhipeng Yang*,
Infinitely many sign-changing solutions for nonlinear fractional Kirchhoff equations. **Applicable Analysis.** **101**, no. 16, 5850–5871, 2022.
18. Guangze Gu and Zhipeng Yang*,
On the singularly perturbation fractional Kirchhoff equations: Critical case. **Adv. Nonlinear Anal.** **11**, no.1, 1097-1116, 2022.
19. Zhipeng Yang*,
Non-degeneracy of positive solutions for fractional Kirchhoff problems: High dimensional cases. **J. Geom. Anal.** **32**, 139, 2022.
20. Guangze Gu and Zhipeng Yang*,
Positive eigenfunctions of a class of fractional Schrödinger operator with a potential well. **Differential Integral Equations.** **35**, no.1-2, 123-150, 2022.
21. Yongpeng Chen and Zhipeng Yang*,
Multiplicity of solutions for a class of critical Schrödinger-Poisson system with two parameters. **Acta Math. Sci. Ser. A (Chin. Ed.)** **41**, no.6, 1750-1767, 2021.
22. Zhipeng Yang and Yuanyang Yu*,
Existence and concentration of solution for Schrödinger-Poisson system with local potential. **Partial Differ. Equ. Appl.** **2**, no. 47, 2021.
23. Zhipeng Yang*,
Fujita exponent and nonexistence result for the Rockland heat equation. **Appl. Math. Lett.** **121**, 107386, 2021.
24. Zhipeng Yang, Wei Zhang and Fukun Zhao*,
Existence and concentration results for fractional Schrödinger-Poisson system via penalization method. **Electron. J. Differential Equations** **2021**, no.14, 1-31, 2021.
25. Zhipeng Yang and Fukun Zhao*,
Multiplicity and concentration behaviour of solutions for a fractional Choquard equation with critical growth. **Adv. Nonlinear Anal.** **10**, no.1, 732-774, 2021.
26. Zhipeng Yang and Yuanyang Yu*,
Geometrically distinct solutions of nonlinear elliptic systems with periodic potentials. **Arch. Math.** **115**, no.6, 703-716, 2020.
27. Tiankun Jin and Zhipeng Yang*,
The fractional Schrödinger-Poisson systems with infinitely many solutions. **J. Korean Math. Soc.** **57**, no.2, 489-506, 2020.
28. Shaoxiong Chen, Yue Li and Zhipeng Yang*,
Multiplicity and concentration of nontrivial nonnegative solutions for a fractional Choquard equation with critical exponent. **Rev.R.Acad.Cienc.Exactas Fís.Nat.Ser.A Mat. RACSAM.** **114**, no.1, 2020.
29. Zhipeng Yang, Yuanyang Yu and Fukun Zhao*,
The concentration behavior of ground state solutions for a critical fractional Schrödinger-Poisson system with competing potentials. **Math. Nachr.** **292**, no.8, 1837-1868, 2019.
30. Zhipeng Yang, Yuanyang Yu and Fukun Zhao*,
Concentration behavior of ground state solutions for a fractional Schrödinger-Poisson system involving critical exponent. **Commun. Contemp. Math.** **21**, no.6, 1850027, 2019.
31. Xianyong Yang and Zhipeng Yang*,
Existence of multiple non-trivial solutions for a nonlocal problem. **AIMS Math.** **4**, 299-307, 2019.

32. Zhipeng Yang and Fukun Zhao*,
Three solutions for a fractional Schrödinger equation with vanishing potential. **Appl. Math. Lett.** **76**, 90-95, 2018.

Grants, Fellowships

1. *The uniqueness and monotonicity of solutions to a class of free boundary problem for elliptic equations and related topics*, No.12561020, National Natural Science Foundation of China, 2026-2029, Co-PI.
2. *Integral inequalities on homogeneous groups and their applications*, No.202401AU070123, Yunnan Province Applied Basic Research Program, 2024-2027, PI.
3. *Xingdian Talent Support Program—Young Talents*, 2024-2028, PI.
4. *Hardy inequality and related problems on two step stratified Lie groups*, No.12301145, National Natural Science Foundation of China, 2024-2026, PI.
5. *Existence and asymptotic behavior of solutions to a class of nonlocal elliptic equations*, No. 202301AU070144, Yunnan Province Applied Basic Research Program, 2023-2026, PI.
6. *Minimum Energy Solutions of Elliptic Equations with Kirchhoff Terms*, No. 2023J0199, Scientific Research Project of Yunnan Provincial Ministry of Education, 2023-2025, PI.
7. *Existence and related problems for two classes of strongly indefinite variational problems*, No.12261107, National Natural Science Foundation of China, 2023-2026, Co-PI.
8. *Yunnan Normal University—Lianda Scholars*, 2022-2027, PI.
9. *Multiplicity and property analysis of solutions of nonlocal elliptic equations*, No.11771385, National Natural Science Foundation of China, 2018-2021, Co-PI.
10. *A variational problem with the fractional Laplace operator*, No.yjs201677, Innovation Fund Project for Graduate Students of Yunnan Normal University, 2016-2017, PI.
11. *Application of Differential Equation in chemical reaction models*, Innovation Fund Project for undergraduate Students of Harbin Normal University, 2013-2014, PI.

Professional Service

- Referee for:
 - Acta Mathematica Scientia
 - Annali della Scuola Normale Superiore di Pisa, Classe di Scienze
 - Applied Mathematics Letters
 - Boundary Value Problems
 - Complex Variables and Elliptic Equations
 - Discrete and Continuous Dynamical Systems-A
 - Discrete and Continuous Dynamical Systems-S
 - Electronic Research Archive
 - Fractal and Fractional
 - IEEE Signal Processing Letters
 - International Journal of Applied and Computational Mathematics
 - Journal of Function Spaces
 - Journal of Mathematical Physics
 - Journal of Mathematical Study
 - Kyungpook Mathematical Journal
 - Qualitative Theory of Dynamical Systems
 - Mathematical Methods in the Applied Sciences

- Mathematics
- Novi Sad Journal of Mathematics
- Zeitschrift für angewandte Mathematik und Physik
- The Journal of Geometric Analysis
- Reviewer for: zbMATH and Mathematical Reviews.
- Organizer of:
 - Seminar on Analysis of Partial Differential Equations weekly (online).
 - 2025: The 1st Yunnan Symposium on Nonlinear Analysis and Nonlinear Partial Differential Equations
 - :2025: YNNU Advanced Workshop in Mathematics II
 - 2025: Kunming Seminar on Nonlinear Analysis
 - 2024: YNNU Advanced Workshop in Mathematics I
 - 2024: The 2nd Lianda Mathematics Graduate Summer School
 - 2024: Workshop on Nonlinear Analysis and Partial Differential Equations
 - 2024: Young Scholars Forum on Nonlinear Analysis
 - 2023: The 1nd Lianda Mathematics Graduate Summer School

Honors and Awards

1. Xingdian Talent, Yunnan Province, 2023.
2. Excellent Thesis Award, Yunnan Province, 2020.
3. Excellent Thesis Award, Yunnan Normal University, 2018.
4. Yunnan Provincial Government Scholarship, Yunnan Normal University, 2017.
5. The Wu Daguan Scholarship for graduate students, Yunnan Normal University, 2017.
6. National Scholarship for graduate students, Yunnan Normal University, 2016.
7. Outstanding Graduates Awards, Harbin Normal University, 2015.
8. National Encouragement Scholarship, Harbin Normal University, 2012, 2013, 2014.

Talks

- Conference talks
 - 2025.07: 15th International ISAAC Congres, Nazarbayev University, Kazakhstan.
 - 2025.05: International Conference on Nonlinear Analysis and 23rd National Conference on Nonlinear Functional Analysis, Jiangsu University of Technology, China.
 - 2025.04: 2025 Workshop on Nonlinear Partial Differential Equations, Nanjing Normal University, China.
 - 2024.12: Tianyuan Mathematics Research Center, China.
 - 2023.07: 2023 Workshop on Harmonic Analysis, Harbin Institute of Technology, China.
 - 2023.06: 2023 Xi'an Frontier Forum on Nonlinear Functional Analysis, Shaanxi Normal University, China.
 - 2023.05: International Conference on Nonlinear Analysis and 22rd National Conference on Nonlinear Functional Analysis, Guizhou Minzu University, China.
 - 2022.07: 2022 Annual Conference of the Yunnan Mathematical Society, Zhaotong University, China.
 - 2022.07: The 8th Western China Conference on Partial Differential Equations, Guizhou Normal University, China.

- 2022.02: Conference on Microlocal and Global Analysis in Geometry and Mathematical Physics, University of Potsdam, Potsdam, Germany.
- 2020.02: Conference on Microlocal and Global Analysis in Geometry and Mathematical Physics, University of Potsdam, Potsdam, Germany.
- Seminar talks
 - 2025.07: Academy of Mathematics and System Sciences
 - 2025.05: Yunnan Normal University
 - 2025.04: Kunming University
 - 2024.11: Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences
 - 2024.11: Harbin Normal University
 - 2023.08: ShanghaiTech University
 - 2023.06: Renmin University of China
 - 2022.07: Chongqing Normal University
 - 2022.05: Gannan Normal University
 - 2022.04: Nanjing Normal University

Conference Attended

1. 2025.Aug 20-25: China-Korea Workshop on Partial Differential Equations, University of Science and Technology of China, China.
2. 2025.Jul 21-25: 15th International ISAAC Congress, Nazarbayev University, Kazakhstan.
3. 2025.May 23-26: International Conference on Nonlinear Analysis and 23rd National Conference on Nonlinear Functional Analysis, Jiangsu University of Technology, China.
4. 2025.May 9-11: The 12th Young Scholars Forum on Partial Differential Equations, Shanxi University, China.
5. 2025.Apr 25-27: Workshop on Nonlinear Partial Differential Equations, Nanjing Normal University, China, April 25-27, 2025
6. 2025.Dec 8-14: Tianyuan Mathematics Research Center, China.
7. 2024.Jul 19-22: 2024 Annual Conference of the Yunnan Mathematical Society, Baoshan University, China.
8. 2024.Jun 9-14: Tianyuan Mathematics Research Center, China.
9. 2024.May 10-13: The 11th Young Scholars Forum on Partial Differential Equations, Anhui Normal University, China.
10. 2023.Dec 22-25: The 2023 Annual Conference of the Chinese Mathematical Society, Dalian University of Technology, China.
11. 2023.Jul 21-24: 2023 Annual Conference of the Yunnan Mathematical Society, Chuxiong Normal University, China.
12. 2023.Jul 10-12: 2023 Workshop on Harmonic Analysis, Harbin Institute of Technology, China.
13. 2023.Jun 22-24: 2023 Xi'an Frontier Forum on Nonlinear Functional Analysis, Shaanxi Normal University, China.
14. 2023.May 19-22: International Conference on Nonlinear Analysis and 22rd National Conference on Nonlinear Functional Analysis, Guizhou Minzu University, China.
15. 2023.May 12-15: The 10th Young Scholars Forum on Partial Differential Equations, Northwestern Polytechnical University, China.
16. 2022.Jul 16-18: 2022 Annual Conference of the Yunnan Mathematical Society, Zhaotong University, China.

17. 2021.Jul 23-26: International Conference on Nonlinear Analysis and 21th National Conference on Nonlinear Functional Analysis, Yunnan Normal University, China.
18. 2021.Feb 15-19: Conference on Microlocal and Global Analysis in Geometry and Mathematical Physics, University of Potsdam, Germany.
19. 2019.Aug 7-8: Workshop on Dynamics of PDEs from Fluids and Nonlinear Waves, Nanjing University, China.
20. 2019.Jun 15-17: International Workshop on Nonlinear Analysis and Reaction Diffusion equation, Harbin Normal University, China.
21. 2019.May 10-12: Workshop on Nonlinear Analysis and its Applications of Young Scholars, Central China Normal University, China.
22. 2019.Apr 22-26: Workshop on Emerging Areas in Reaction-diffusion Systems: Mathematical Theory and Applications to Physics, Biology and the Social Sciences, East China Normal University, China.
23. 2018.Nov 30-Dec 3: 2018 Workshop on Nonlinear Analysis of Young Scholars, Yunnan Normal University, China.
24. 2018.May 14-18: International Conference on Variational Methods (ICVAM-4), Chern Institute of Mathematics, Nankai University, China.
25. 2018.May 11-14: International Conference on Nonlinear Analysis and 20th National Conference on Nonlinear Functional Analysis, Shanxi University, China.
26. 2017.Jun 14-17: 11th East China Partial Differential Equations Conference, East China Normal University, China.
27. 2017.May 25-27: International Conference on Nonlinear Functional Analysis, Yunnan Normal University, China.
28. 2016.May 20-22: International Conference on Nonlinear Analysis and 19th National Conference on Nonlinear Functional Analysis, Central China Normal University, China.
29. 2014.Jul 14-16: International Conference on Nonlinear Analysis and 18th National Conference on Nonlinear Functional Analysis, Harbin Normal University, China.