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Education

Ph.D. Mathematics, University of California, Los Angeles (UCLA), 2008.

M.S. Mathematics, Beijing Normal University, 2004.

B.S. Mathematics, Beijing Normal University, 2001.

Research Interests

Harmonic Analysis, Partial Differential Equations (PDE).

Employment

The University of Kansas, 2017– present, Associate Professor.

The University of Kansas, 2011– 2017, Assistant Professor.

The Institute for Mathematics and its Applications at the University of Minnesota, 2009–2011.

The Institute for Advanced Study, 2008–2009.

Award

NSF Analysis program, *"Research Problems in Harmonic Analysis and Partial Differential Equations"*, DMS 1160981, $99767.00, 09/2011-05/2015.

KU General Research Fund, 2016–2017.

Publication

Preprint

1. S. Shao and H. Shih. A remark on the two dimensional water wave problem with surface tension. arXiv: 1712.00090. Journal of Differential Equations, 2018 November.
2. S. Shao. On smoothness of extremizers of the Tomas-Stein inequality for S^1. *arXiv:1601.07119. Preprint.*
3. J. Jiang, S. Shao and B. Stovall. Linear Profile decomposition for a family of fourth order Schrödinger equations. *arXiv:1410.7520. Submitted.*

Journal Articles

1. S. Shao. On existence of extremizers for the Tomas-Stein inequality for S^1. *arXiv:1507.04302. Journal of Functional Analysis*, 270 (2016), 3996-4038.

2. J. Jiang, C. Lin and S. Shao. On one dimensional quantum Zakharov system. *arXiv:1412.2882. Discrete and Continuous Dynamical Systems - A*, 36 (10), 5445 –5475.

3. J. Jiang and S. Shao On characterization of the sharp Strichartz inequality for the Schrödinger equation. *arXiv:1404.0985. Analysis & PDE*, 9-2 (2016), 353–361.

4. S. Kwon and S. Shao. Nonexistence of soliton-like solutions for defocusing generalized KdV equations, *Electronic JDE.*, 2015 (51):1–5.

5. M. Christ and S. Shao. On the extremisers of an adjoint Fourier restriction inequality. *Advances in Mathematics*, 230(3), 957– 977, 2012.

6. M. Christ and S. Shao. Existence of extremals for a Fourier restriction inequality. *Analysis & PDE*, 5(2): 261–312, 2012.

7. D. Hundertmark and S. Shao. Analyticity of extremisers to an Airy Strichartz inequality. *Bulletin of London Mathematical Society*, 44 (2): 336–352, 2012.

8. R. Killip, S. Kwon, S. Shao, and M. Visan. On the mass-critical generalized KdV equation. *Discrete and Continuous Dynamical System-Series A*, 32 (1): 191–221, 2012.

9. B. Pausader and S. Shao. The mass critical fourth-order Schrödinger equation in high dimensions. *Journal of Hyperbolic Differential Equations*, 7(4): 651–705, 2010.

10. J. Jiang, B. Pausader, and S. Shao. The linear profile decomposition for the fourth order Schrödinger equation. *Journal of Differential Equations*, 249:2521–2547, 2010.

11. C. Miao, S. Shao, Y. Wu, and G. Xu. The low regularity global solution for the critical generalized KdV equation. *Dynamics of Partial Differential Equations*, 7(3):265–288, 2010.

12. S. Shao. The linear profile decomposition for the Airy equation and the existence of maximizers for the Airy Strichartz inequality. *Analysis & PDE*, 2(1):83–117, 2009.

13. S. Shao. Maximizers for the Strichartz and the Sobolev-Strichartz inequalities for the Schrödinger equation. *Electronical Journal of Differential Equations*, No. 3:1–13, 2009.

14. S. Shao. Sharp linear and bilinear restriction estimates for paraboloids in the cylindrically symmetric case. *Revista Matemática Iberoamericana*, 25(3):1127–1168, 2009.

15. S. Shao. A note on the cone restriction conjecture in the cylindrically symmetric case. *Proceedings of the AMS*, 137(1):135–143, 2009.

16. Y. Ding, S. Lu, and S. Shao. Integral operators with variable kernels on weak Hardy spaces. *Journal of Mathematical Analysis and Applications*, 317(1):127–135, 2006.

17. Y. Ding, C. Lin, and S. Shao. On the Marcinkiewicz integral with variable kernels. *Indiana University Mathematics Journal*, 53(3):805–821, 2004.

Research Talks

1. *Beijing Conference on harmonic analysis and its applications* , *"On characterization of the sharp Strichartz inequalities for the Schrd̈inger equations"*, University of Chinese Academy of Sciences, Beijing, China, *June 2018.*
2. *Special Section of nonlinear Dispersive Equations* , *"On characterization of the sharp Strichartz inequalities for the Schrd̈inger equations"*, Shanghai joint AMS-CMS meeting, Shanghai, China, *June 2018.*
3. *Special Section of Harmonic analysis and Its Applications*, *"On smoothness of extremizers to the Tomas-Stein inequality for S^1"*, Shanghai joint AMS-CMS meeting, Shanghai, China, *June 2018.*
4. *Short course*, *"Introduction to Dispersive Equations"*, Huazhong University of Science and Technology, Wuhan, China, *July 2018.*
5. *Short course*, *"An introduction to Fourier Analysis"*, Huazhong University of Science and Technology, Wuhan, China, *July 2017.*
6. *Department Colloquium*, *"On characterization of the sharp Strichartz inequality for the Schrödinger equation"*, National Cheng-Kung University, Taiwan *June, 2016.*
7. *Department Colloquium*, *"On characterization of the sharp Strichartz inequality for the Schrödinger equation"*, National Tsing-Hua University, Taiwan *May, 2016.*
8. *Analysis Seminar*, *"On smoothness of extremizers to the Tomas-Stein inequality for S^1"*, Indiana University, Bloomington, IN *March 2016.*
9. *Analysis Seminar*, *"On smoothness of extremizers to the Tomas-Stein inequality for S^1"*, Huazhong University of Science and Technology, Wuhan, China, *December 2015.*
10. *Department Colloquium*, *"The pointwise convergence problem of the Schrödinger operator"*, University of Missouri, Kansas City, MO *October 2015.*
11. *Special section on harmonic analysis and partial differential equations*, *"The linear profile decomposition for a family of 4th order Schrödinger equations"*, East Lansing, MI, *March 2015.*
12. *PDE Seminar*, *"A remark on the water wave equation with surface tension"*, Peking University, Beijing, China, *June 2014.*
13. *PDE Seminar*, *"On characterization of the sharp Strichartz inequality for the Schrödinger equation"*, Peking University, Beijing, China, *June 2014.*
14. *PDE Seminar*, *"The linear profile decomposition for a family of 4th order Schrödinger equations"*, Peking University, Beijing, China, *June 2014.*
15. *Department Colloquium*, *"The linear profile decomposition for a family of 4th order Schrödinger equations"*, Beijing Normal University, Beijing, China, *June 2014.*
16. *Analysis Seminar*, *"A remark on the water wave equation with surface tension"*, University of Science and technology Beijing, Beijing, China, *June 2014.*
17. *Analysis Seminar*, *"The linear profile decomposition for a family of 4th order Schrödinger equations"*, China University of Mining and Technology, Beijing, China, *June 2014.*
18. *International workshop on Harmonic Analysis and its Applications*, *"The linear profile decomposition for a family of 4th order Schrödinger equations"*, Chern Institute, Nankai University, Tianjin, China, *June 2014.*

19. *International workshop on Harmonic Analysis and its Applications*, *"On extremals to a bilinear Strichartz inequality"*, Haikou City, Hainan Province, China, *January 2013.*

20. *International workshop on Harmonic Analysis and its Applications*, *"On extremals to a bilinear Strichartz inequality"*, Haikou City, Hainan Province, China, *January 2013.*

21. *Analysis Seminar*, *"On smoothness of extremals to the Stein-Tomas inequality for the sphere"*, University of Chinese Academy of Sciences, Beijing, China, *December, 2012.*

22. *Analysis Seminar*, *"On smoothness of extremals to the Stein-Tomas inequality for the sphere"*, Beijing Normal University, Beijing, China, *December, 2012.*

23. *Analysis Seminar*, *"On smoothness of extremals to the Stein-Tomas inequality for the sphere"*, University of Wisconsin, Madison, *October, 2012.*

24. *Analysis Seminar*, *"On smoothness of extremals to the Stein-Tomas inequality for the sphere"*, University of Kansas, Lawrence, *October, 2012.*

25. *Special Section on Harmonic Analysis and its Applications*, *"A remark on the two dimensional water wave problem with surface tension"*, AMS Sectional Meeting at Lawrence, *March 2012.*

26. *Special Section on Harmonic Analysis and Partial Differential Equations*, *"A remark on the two dimensional water wave problem with surface tension"*, AMS Sectional Meeting at Salt Lake City, *October 2011.*

27. *Analysis of PDE conference*, *"A remark on the two dimensional water wave problem with surface tension"*, John Hopkins University, *March 2011.*

28. *Analysis Seminar*, *"On extremals to the Tomas-Stein inequality for the sphere"*, University of Wisconsin, Madison, *September 2010.*

29. *The Annual Meeting of Harmonic Analysis and PDE*, *"On extremals to the Tomas-Stein inequality for the sphere"*, MudanJiang, HeilongJiang Province, China *July 2010.*

30. *IMA Postdoc Seminar*, *"Analyticity of extremals to the Airy Strichartz inequality"*, University of Minnesota, *March 2010.*

31. *PDE Seminar*, *"On extremals to the Tomas-Stein inequality for the sphere"*, University of Minnesota, Minneapolis *October 2009.*

32. *Harmonic Analysis and Mathematics Physics Seminar*, *"Profile decomposition for Airy equation and applications in critical gKdV"*, UIUC, *April 2009.*

33. *PDE Seminar*, *"Profile decomposition for Airy equation and applications in critical gKdV"*, Brown University, *March 2009.*

34. *Geometric PDE Seminar*, *"The Minimal-Mass Blow-Up Solutions of the Mass-Critical gKdV"*, Institute for Advanced Study, *March 2009.*

35. *Courant Institute Analysis Seminar*, *"The Minimal-Mass Blow-Up Solutions to the Mass-Critical gKdV"*, New York University, *February 2009.*

36. *Harmonic Analysis and PDE session in the joint meeting of AMS and SMS*, *"The Minimal-Mass Blow-Up Solutions to the Mass-Critical gKdV"*, Fudan University, Shanghai, China *December 2008.*

37. *International Workshop in Fourier Analysis and PDE*, *"Profile decomposition for the Airy equation"*, Beijing Normal University, Beijing, China *December 2008.*

38. *Math Department Colloquium*, *Sharp linear and bilinear restriction estimate for paraboloids in the cylindrically symmetric case*, Georgia Southern University, *May 2008.*

39. *Calderón-Zygmund Analysis Seminar*, *Sharp linear and bilinear restriction estimate for paraboloids in the cylindrically symmetric case*, University of Chicago, *November 2007.*

40. *Analysis and PDE Seminar*, *Sharp linear and bilinear restriction estimate for paraboloids in the cylindrically symmetric case*, John Hopkins University, *September 2007.*

Teaching

Teaching at University of Kansas

2018 Spring	Math 811 (Graduate Real Analysis II)
2017 Fall	Math 290 (Linear Algebra)
2017 Fall	Math 500 (Intermediate Analysis)
2017 Spring	Math 800 (Complex Analysis)
2016 Fall	Math 220 (Elementary Differential Equations)
2016 Fall	Math 810 (Graduate Real Analysis)
2016 Spring	Math 766 (Mathematical Analysis II)
2015 Fall	Math 890 (Fourier Analysis)
2015 Fall	Math 220 (Elementary Differential Equations)
2015 Spring	Math 500 (Intermediate Analysis)
2014, Fall	Math 320 (Elementary Differential Equations)
2014, Fall	Math 290 (Elementary Linear Algebra)
2014, Spring	Math 766 (Mathematical Analysis II)
2013, Fall	Math 290 (Elementary Linear Algebra)
2013, Fall	Math 647 (Introduction to PDE)
2013, Spring	Math 500 (Intermediate Real Analysis)
2012, Fall	Math 765 (Mathematical Analysis I)
2012, Spring	Math 500 (Intermediate Real Analysis)
2011, Fall	Math 290 (Elementary Linear Algebra)

Professional Activity

Referee for: *Annales scientifiques de l'ENS, Analysis & PDE, AMS contemporary Math., AMS monthly, Differential & Integral Equations, Discrete & Continuous Dynamical Systems–Series A, Dynamics of Partial Differential Equations, Electronic Research Announcements in Mathematical Science, Frontiers of Mathematics in China, GAFA, IMRN, Proceedings of Edinburgh Mathematical Society, Journal of Differential Equations, Journal of Functional Analysis, Journal of Nonlinear Analysis, Series-A, Journal de Mathématiques Pures et Appliquées, Journal d' Analyse Mathematique, Journal of Inequalities and applications, Journal of Mathematical Analysis and Applications, Pacific Journal of Mathematics, Proceedings of AMS, Science China Mathematics, Series A.*
Co-orgainizer, AMS special session on dispersive and geometric partial differential equations, 2014 Joint mathematical meetings, Baltimore, MD. (Joint with Chongchun Zeng and Shijun Zheng)