Xi Cen

Address	School of Science,	**Email**	xicenmath@gmail.com
	China University of Mining and Technology (Beijing),	**ResearchGate**	ResearchGate–Link
	Beijing 100083, People's Republic of China	**CV–Online**	https://xicenmath.github.io/homepage/cv.pdf

Personal Profile

My research interests mainly focus on Euclidean harmonic analysis, which can be divided into the following aspects:

(1) The property of multilinear oscillatory integral operators, multilinear Fourier integral operators, multilinear pseudo-differential operators, multilinear Fourier multipliers.

(2) Sparse bounds and sharp weighted bounds of the important operators.

(3) Multilinear extrapolation theory and multilinear dyadic representation theory.

(4) The singular integral operators and maximal operators along the curve.

(5) Boundedness extended to the weighted multi-exponent function spaces (weighted Besov spaces, weighted Triebel spaces, weighted Sobolev spaces).

Education

2025.9–now	Master student – China University of Mining and Technology (Beijing) Advisor: Prof. Xinfeng Wu
2018.9–2022.6	Bachelor of Science – Southwest University of Science and Technology

Professional services

Referee for "Journal of Function Spaces" and "AIMS Mathematics" in 2024.

Publications

1. Xi Cen, **The multilinear Littlewood-Paley square operators and their commutators on weighted Morrey spaces**, *Indian J. Pure Appl. Math., 2024, 55(2): 749-775.*

2. Xi Cen, **Fractional maximal operators on weighted variable Lebesgue spaces over the spaces of homogeneous type**, *Anal.Math.Phys. 14, 94 (2024).*

3. Xi Cen, Qianjun He, Zichen Song, Zihan Wang, **New fractional type weights and the boundedness of some operators**, *Anal.Math.Phys. 15, 26 (2025).*

4. Xi Cen, **New variable weighted conditions for fractional maximal operators over spaces of homogeneous type**.*https://arxiv.org/abs/2408.04544*

5. Xi Cen, Zichen Song, **The multilinear fractional sparse operator theory I: pointwise domination and weighted estimate**, (Under Review in J. Geom. Anal.)

6. Xi Cen, Zichen Song, **The multilinear fractional bounded mean oscillation operator theory I: sparse domination, sparse $T1$ theorem, off-diagonal extrapolation, quantitative weighted estimate—for generalized commutators**, *https://arxiv.org/abs/2506.23486*

7. Xi Cen, **Improving sparse bounds I: Sparse domination for multilinear pseudo-differential operators**, *J. Geom. Anal. 36, 20 (2026).*

8. Xi Cen, **Sparse bounds and sharp weighted bounds for multilinear pseudo-differential operators and their commutators**, (Under Review in Bull. London Math. Soc.)

9. Xi Cen, **Quantitative weighted multi-exponent improvements for pseudo-differential Operators**, (Under Review in J. Geom. Anal.)

10. Xi Cen, **The sharp weighted and unweighted boundedness theory for multilinear oscillatory integral operators**, (Submitted).

11. Xi Cen, **The standard sparse domination and standard sharp weighted estimates for multilinear oscillatory integral operators**, (Under Review in Banach J. Math. Anal.).

12. Xi Cen, Zichen Song, **The new weak-type boundedness of multilinear pseudo-differential operators**, (Submitted).

13. Xi Cen, Zichen Song, **The off-diagonal improving weighted estimates for pseudo-differential operators**, (Under Review in Banach J. Math. Anal.)

14. Xi Cen, Zichen Song, **The off-diagonal improved weighted estimates for pseudo-differential operators II: via off-diagonal sharp maximal function estimates**, (Under Review in J. Fourier Anal. Appl.)

15. Xi Cen, Zihan Wang, **The off-diagonal quantitative weighted improvements for oscillatory integral operators**, (Submitted)

16. Xi Cen, Zichen Song, Xinfeng Wu, **Weighted improvements for multilinear pseudo-differential operators and their commutators**, (Submitted)

17. Xi Cen, **The roughness improvements of multilinear oscillatory integral operators on local Hardy spaces**, (Reviesd in J. Fourier Anal. Appl.)

18. Xi Cen, **Sharp maximal function estimates and weighted estimates for multilinear oscillatory integral operators and their commutators**, (Submitted)

19. Xi Cen*, Zichen Song, **Off-Diagonal Quantitative Weighted Improvements Theory for Multilinear Operators with Integral Regularity: Beyond Multilinear Oscillatory Integral Operators**, (Submitted)

Math is hard. So is life. Get over it!