Xi Cen

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Personal Profile

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

(1) The property of Multilinear Fourier integral-type operators (Fourier integral operators, pseudo-differential operators, 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**, (Submitted).

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**, (Submitted)

7. Xi Cen* **Improving sparse bounds I: dilated sparse domination for multilinear pseudo-differential operators**, (Under Review in J. Geom. Anal.)

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 I**, (Under Review in J. Geom. Anal.)

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

11. Xi Cen*, **The standard sparse domination and standard sharp weighted estimates for multilinear Fourier integral operators**, (Submitted).

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*, **The off-diagonal improving weighted estimates for Fourier integral operators**, (Submitted)

15. Xi Cen*, Zichen Song, Xinfeng Wu, **Sharp maximal function estimates and weighted estimates for multilinear pseudo-differential operators and their commutators**, (Submitted)

16. Xi Cen*, **The global boundedness of linear and multilinear Fourier integral operators on local Hardy spaces**, (Submitted)

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

(*–the corresponding author)

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