# 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

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| **2025.9–now** | Master student – China University of Mining and Technology (Beijing)<br>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)

6. Xi Cen* **Improving sparse bounds I: dilated sparse domination for multilinear pseudo-differential operators**, (Under Review)

7. Xi Cen*, **Sparse bounds and sharp weighted bounds for multilinear pseudo-differential operators and their commutators I**, (Under Review)

8. Xi Cen*, **Sparse bounds and sharp weighted bounds for multilinear pseudo-differential operators and their commutators II: the multi-exponent Hörmander class**, (Submitted)

9. Xi Cen* and Zichen Song, **Quantitative weighted multi-exponent improvements for pseudo-differential Operators I**, (Submitted)

(*–the corresponding author)

**August 20, 2025**