

The generalized localization for multiple Fourier integrals.

ABSTRACT

In this paper we investigate almost-everywhere convergence properties of the Bochner–Riesz means of N -fold Fourier integrals under summation over domains bounded by the level surfaces of the elliptic polynomials. It is proved that if the order of the Bochner–Riesz means $s \geq (N-1)(1/p-1/2)$, then the Bochner–Riesz means of a function $f \in L_p(\mathbb{R}^N)$, $1 \leq p \leq 2$ converge to zero almost-everywhere on $\mathbb{R}^N \setminus \text{supp}(f)$.

Keyword: Bochner-Riesz means; Multiple Fourier integral; Spectral expansions of elliptic differential operators; The generalized localization.