ON CONVERGENCE ALMOST EVERYWHERE OF MULTIPLE FOURIER INTEGRALS
(Mengenai Penumpuan Hampir di Mana-Mana bagi Kamiran Fourier Berganda)

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ABSTRACT

In this paper we investigate the principle of the generalised localisation for spectral expansions of the polyharmonic operator, which coincides with the multiple Fourier integrals summed over the domains corresponding to the surface levels of the polyharmonic polynomials. It is proved that the partial sums of the multiple Fourier integrals of a function $f \in L_2(R^N)$ converge to zero almost-everywhere on $R^N \setminus supp f$.

Keywords: Fourier integrals; spectral expansions; maximal operators

ABSTRAK

Dalam makalah ini dikaji prinsip penempatan teritlak untuk kembangan spektrum bagi pengoperasi poliharmonik yang bertindih dengan kamiran Fourier berganda yang dijumlahkan ke atas domain yang sepadan dengan aras permukaan polinomial poliharmonik. Dibuktikan bahawa jumlah separa kamiran Fourier berganda bagi fungsi $f \in L_2(R^N)$ bertumpu kepada sifar hampir di mana-mana pada $R^N \setminus supp f$.

Kata kunci: Kamiran Fourier; kembangan spektrum; pengoperasi maksimum

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