

On the localization of the spectral expansions of distributions

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In the present work it is investigated the problems of the localization of multiple trigonometric Fourier series of the periodic distributions. It is established necessary and sufficient conditions for the localization of the Riesz means of multiple trigonometric Fourier series of distributions from negative periodic Sobolev spaces.

We prove a theorem that characterizes sufficient conditions for summability of the spectral decompositions in a certain class of operators. Then we prove a theorem which showed that conditions found in the previous theorem is also necessary in that class of operators. Though we also prove that for each operator from that class we can weaken obtained condition.