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Titchmarsh's theorem for the generalized Dunkl transform

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Authors:

Hassan BENLAAJINE¹

¹ Faculty of Sciences Ain Chock,
Casablanca, Morocco

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Abstract

Integral transforms and their inverses (e. g. the Bessel transform) are widely used to solve various problems in calculus, mechanics, mathematical physics and computational mathematics (see [1]).

Titchmarsh's theorem [2] characterized the set of functions in $L^2(\mathbb{R})$ satisfying the Cauchy Lipschitz condition by means of an asymptotic estimate growth of the norm of their Fourier transform.

We will try to complete the work done in our research laboratory on this theory, (see [3] and [4]), and another laboratory works, (see [5] and [6]).

Using a generalized dual translation operator, we obtain an analog of Titchmarsh's theorem and the analog of Dini Lipschitz theorem for the generalized Dunkl transform.

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