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## The Dunkl Fourier Transformation and expansion to a two-body system

This paper aims to introduce the Dunkl Fourier transform and expand it for the two body systems. We arrive at the Dunkl Fourier transform by generalizing a simple definition of the Fourier transform and applying this theory to square wave packets and Gaussian wave packets. In addition, we convert the harmonic oscillator from position space to momentum space by Dunkl Fourier transformation. We show that the treatment of the Dunkl transform is very much like the approach to the Fourier transform on  $\mathbb{R}^N$  so that in the absence of a deformation parameter the Dunkl transform is the usual Fourier transform.

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