



Fourier Transforms of Orthogonal Polynomials on The Double Cone

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Abstract

The purpose of this paper is to obtain Fourier transforms of multivariate orthogonal polynomials on the double cone such as generalized Gegenbauer polynomials on the double cone and generalized Hermite polynomials on the double cone, and to define two new families of multivariate orthogonal functions by using Parseval's identity. In addition, some properties of these functions will be investigated.

Keywords: Generalized Gegenbauer polynomials, generalized Hermite polynomials, multivariate orthogonal polynomials, Fourier transform, Parseval's identity.

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