

LAPLACE TRANSFORM OF HYPERGEOMETRIC FUNCTIONS AND ZETA DISTRIBUTIONS IN THE DUNKL SETTING

DOMINIK BRENNECKEN

ABSTRACT

The Dunkl setting related to root systems of type A generalizes many classical results from the radial analysis on symmetric cones. In this talk we shall present Laplace transform identities involving the Cherednik kernel and the Heckman-Opdam hypergeometric function of type A . These formulas are in line with the corresponding formulas on symmetric cones where the Cherednik kernel and hypergeometric function take the role of the generalized power functions and the spherical functions. In particular, for certain spectral parameters this includes Laplace transform identities for (non-)symmetric Jack polynomials. From that we obtain Laplace transform identities for ${}_pF_q$ hypergeometric series in terms of Jack polynomials which are in analogy to results on symmetric cones. These identities for hypergeometric functions allow to study Zeta distributions in the Dunkl setting of type B and in line with the theory of Zeta distributions on symmetric cones including a functional equation.

UNIVERSITY OF PADERBORN

E-mail address: bdominik@math.upb.de