

BOUNDARY VALUE PROBLEMS FOR THE DUNKL LAPLACIAN

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Abstract: Let Δ_k be the Dunkl Laplacian on \mathbb{R}^d associated with a reflection group W and a multiplicity function k . The purpose of this paper is to establish the existence and the uniqueness of a positive solution on the unit ball B of \mathbb{R}^d to the following boundary value problem:

$$\Delta_k u = \varphi(u) \text{ in } B \quad \text{and} \quad u = f \text{ on } \partial B.$$

We distinguish two cases of nonnegative perturbation φ : trivial and nontrivial.

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