

## Generalized weighted Besov spaces on the Bessel hypergroup

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**Abstract.** In this paper we study generalized weighted Besov type spaces on the Bessel-Kingman hypergroup. We give different characterizations of these spaces in terms of generalized convolution with a kind of smooth functions and by means of generalized translation operators. Also a discrete norm is given to obtain more general properties on these spaces.

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### 1. Introduction

The Besov spaces has been defined by many ways on  $\mathbb{R}^n$  ([8], [4], [14], [15], [12], [13]). This theory has been generalized using Hankel transform and the weight  $t^\gamma$ ;  $\gamma > 0$  ([5], [1]). Our objective is to find weights extending the case  $t^\gamma$  to define generalized weighted Besov type spaces on the Bessel-Kingman hypergroup. In the present work we fix  $\alpha > -\frac{1}{2}$  and we put  $\mathbb{X} = [0, +\infty[$ . For  $1 \leq p, q \leq \infty$  and an adequate weight  $\omega$  (see [2]) we