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SOME PROPERTIES OF THE FRACTIONAL
INTEGRALS ON THE
LAGUERRE HYPERGROUP

Abstract

Let $\mathbb{K} = [0, \infty) \times \mathbb{R}$ be the Laguerre hypergroup which is the fundamental manifold of the radial function space for the Heisenberg group. In this paper we obtain pointwise estimates for the fractional integrals in terms of maximal and fractional maximal functions on the Laguerre hypergroup. On the basis of these results the analogue Sobolev's theorem for the fractional integrals on the Laguerre hypergroup is proved.