# HARDY'S TYPE INEQUALITY FOR LAGUERRE FUNCTIONS OF HERMITE TYPE

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Abstract. A Hardy's type inequality for Laguerre functions of Hermite type with the index $\alpha \in (\{-1/2\} \cup [1/2, \infty))^d$, is proved in the multi-dimensional setting with the exponent $3d/4$. For this purpose we uniformly estimate the $L^2$ norms associated with derivatives of an appropriate family of $L^2$ contractions. Moreover, we obtain the sharp analogue of Hardy's inequality with $L^1$ norm replacing $H^1$ norm at the expense of increasing the exponent by an arbitrarily small value.