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**Besov and Triebel-Lizorkin spaces associated with Laguerre expansions
of Hermite type**

Homogeneous Besov and Triebel-Lizorkin spaces associated with multi-dimensional Laguerre function expansions of Hermite type with index $\alpha \in [-1/2, \infty)^d \setminus (-1/2, 1/2)^d$, $d \geq 1$, are defined and investigated. To achieve expected goals Schwartz type spaces on \mathbb{R}_+^d are introduced and then tempered type distributions are constructed.