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Spectral Multipliers on Damek-Ricci Spaces

Let S be a Damek–Ricci space, and Δ be a distinguished Laplacean on S which is left invariant and selfadjoint in $L^2(\rho)$. We prove that S is a Calderón-Zygmund space with respect to the right Haar measure ρ and the left invariant distance. We give sufficient conditions of Hörmander type on a multiplier m so that the operator $m(\Delta)$ is bounded on $L^p(\rho)$ when $1 < p < \infty$, and of weak type $(1,1)$.

Keywords: Multipliers, singular integrals, Calderon-Zygmund decomposition, Damek-Ricci spaces.

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