Spectral Multipliers on Damek-Ricci Spaces

Let $S$ be a Damek–Ricci space, and $\Delta$ 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 $\rho$ 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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