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Dirichlet problem with L^p-boundary data in contractible domains of Carnot groups

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Abstract. Let $\mathcal{L}$ be a sub-Laplacian on a stratified Lie group G. In this paper we study the Dirichlet problem for $\mathcal{L}$ with L^p-boundary data, on domains Ω which are contractible with respect to the natural dilations of G. One of the main difficulties we face is the presence of non-regular boundary points for the usual Dirichlet problem for $\mathcal{L}$. A potential theory approach is followed. The main results are applied to study a suitable notion of Hardy spaces.

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