

Sharp L_p estimates for the sub-Riemannian wave equation

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The Miyachi-Peral fixed-time L_p estimates with loss of derivatives are among the classical results for the Euclidean wave equation. It is well known that analogues of those estimates hold true for wave equations driven by more general elliptic operators than the standard Laplacian. Notably, a celebrated theorem by Seeger, Sogge and Stein on Fourier integral operators yields such estimates for the Laplace-Beltrami operator on any compact Riemannian manifold. In comparison, the wave equation driven by a (non-elliptic) sub-Laplacian on a sub-Riemannian manifold is much less understood, even in the model setting of noncommutative Carnot groups, and sharp L_p estimates are known only in few particular cases. We report on recent progress, based on joint work with Detlef Müller.