Peter Sjögren: Estimates for some operators associated with the Laplacian with drift in Euclidean space.

Abstract. Let $v \neq 0$ be a vector in $\mathbb{R}^n$. Consider the Laplacian on $\mathbb{R}^n$ with drift $\Delta_v = \Delta + 2v \cdot \nabla$ and the measure $d\mu(x) = e^{2\langle v,x\rangle}dx$, with respect to which Δ_v is self-adjoint. This measure has exponential growth with respect to the Euclidean distance. We study weak type $(1,1)$ and other sharp endpoint estimates for the related Riesz transforms of any order, and also for the vertical and horizontal Littlewood-Paley-Stein functions for the associated heat and the Poisson semigroups.

This is joint work with Hong-Quan Li, Shanghai.

The talk is intended for a general audience of analysts.