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Casey Jao* (cjao@math.berkeley.edu). *Refined Strichartz estimates for the mass-critical quantum harmonic oscillator.*

Sharpened forms of the Strichartz inequality play a pivotal role in the analysis of large data nonlinear Schrödinger equations (and dispersive equations in general) at critical regularity. Such results begin to characterize the linear Schrödinger waves that come close to saturating the standard Strichartz estimate, and the harmonic analysis is especially subtle at L^2 regularity due to an enormous group of noncompact symmetries. Indeed, the recent breakthroughs for the mass-critical NLS ultimately exploit Fourier restriction theory for the paraboloid to construct profile decompositions.

I will discuss generalizations of these refined L^2 -critical estimates to some nontranslation-invariant Schrödinger operators, in particular the harmonic oscillator, to which purely Fourier-analytic methods are ill-adapted. (Received July 28, 2017)