

Abstract Submitted
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Transport coefficients for bosonic and fermionic strongly correlated, disordered nanowires¹ NICHOLAS KOWALSKI, LAURA WADLEIGH, NATHAN FREDMAN, BRIAN DEMARCO, University of Illinois at Urbana-Champaign — Cold lattice gases offer an isolated platform for measuring the intrinsic transport properties of quantum systems. We propose a series of transport measurements in both bosons (^{87}Rb) and fermions (^{40}K) to study the relationship between mass, heat, and spin transport coefficients. We present a scheme for isolating a system of 1D tubes within a 3D optical lattice system using a tightly focused beam. Tunable perturbations, interactions, and disorder allow for the study of transport properties of non-trivial phases, e.g., glassy and asymptotically localized states.

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