

Abstract Submitted
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Anomalous transport in ergodic lattice systems¹ YEVGENY BAR LEV, DAVID R. REICHMAN, Columbia University — Many-body localization transition is a peculiar dynamical transition between ergodic and non-ergodic phases, which may occur at any temperature and in any dimension. For temperatures below the transition the system is nonergodic and localized, such that conductivity strictly vanishes at the thermodynamic limit, while for temperatures above the transition the system is thermal and conductive. In this talk I will present a comprehensive study of the dynamical properties of the ergodic phase in one and two dimensional generic disordered and interacting systems, conducted using a combination of nonequilibrium diagrammatic techniques and numerically exact methods. I will show that the ergodic phase, which was expected to be diffusive, exhibits anomalous transport regime for nontrivial times and explain how our findings settle with phenomenological theoretical models.

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