

Abstract Submitted
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A totally asymmetric exclusion process with hierarchical long range connections¹ JAKUB OTWINOWSKI, STEFAN BOETTCHER, Emory University — A non-equilibrium particle transport model, the totally asymmetric exclusion process, is studied on a one-dimensional lattice with a hierarchy of fixed long-range connections². This model breaks the particle-hole symmetry observed on an ordinary one-dimensional lattice and results in a surprisingly simple phase diagram, without a maximum-current phase. Numerical simulations of the model with open boundary conditions reveal an emergent disorder in the density profile, which is confirmed analytically.

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