

Abstract Submitted
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Transport Enhancement of Bose Hubbard Systems via Barrier Modulation RON PEPINO, FSC — We show that transport characteristics of disordered, lowest band lattices can be greatly-enhanced by modulating the field intensity that generates the lattice structure. We propose two resonant modulation schemes: one requires independent site-by-site control of the tunneling rates, the second involves a global modulation of intensity that generates the lattice structure. We also present effective stationary models for these complicated dynamical systems. For the specific five-site lattices discussed, we numerically predict transport gains ranging from 3×10^6 to roughly 4×10^{10} .

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