Abstract Submitted
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Many-body Bloch oscillations MASUD HAQUE, Max Planck Institute for the Physics of Complex Systems — We consider Bloch oscillations of interacting quantum particles in a one-dimensional lattice subject to a linear potential gradient (a tilt). For hard-core bosons and for free fermions, we show perfectly periodic behavior of density and momentum distributions. The oscillations can be predominantly position oscillations, or predominantly width oscillations, depending on the initial state. We show how the periodic behavior is modified for weak and strong interactions.

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