Title:	Detecting Topological Transitions in Two Dimensions by Hamiltonian Evolution
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Abstract:	We show that the evolution of two-component particles governed by a two-dimensional spin-orbitlattice Hamiltonian can reveal transitions between topological phases. A kink in the mean widthof the particle distribution signals the closing of the band gap, a prerequisite for a quantum phasetransition between topological phases. Furthermore, for realistic and experimentally motivatedHamiltonians the density profile in topologically non-trivial phases displays characteristic rings inthe vicinity of the origin that are absent in trivial phases. The results are expected to have immediateapplication to systems of ultracold atoms and photonic lattices
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