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# Bloch-Zener oscillations across a merging transition of Dirac points

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## Résumé

Bloch oscillations are a powerful tool to investigate spectra with Dirac points. By varying band parameters, Dirac points can be manipulated and merged at a topological transition towards a gapped phase. Under a constant force, a Fermi sea initially in the lower band performs Bloch oscillations and may Zener tunnel to the upper band mostly at the location of the Dirac points. The tunneling probability is computed from the low energy universal Hamiltonian describing the vicinity of the merging. The agreement with a recent experiment on cold atoms in an optical lattice is very good.

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