A. R. Kolovsky: *Landau-Stark states for cold atoms in a parabolic lattice*

Landau-Stark states are eigenstates of a quantum particle in a 2D lattice in the Hall configuration, i.e., in the presence of normal to the lattice plane `magnetic' and in-plane `electric' fields. We report recent analytic results on the Landau-Stark states for a plane lattice. These results are then used to describe the spectrum, eigenstates, and dynamics of cold atoms in a parabolic optical lattice (lattice plus harmonic confinement) under the influence of an artificial magnetic field.

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