Abstract Submitted
for the DAMOP20 Meeting of
The American Physical Society

Calculated band structure of a bichromatic optical lattice with tunable depths and phases[1] JOHN HUCKANS, Bloomsburg University of Pennsylvania — We have calculated the band structure of an optical lattice composed of two commensurate overlapping lattices with tunable depth and phase differences. It is found that for certain lattice depth ratios, bandgaps are highly dependent on phase tuning between the lattices. The results of our calculations relate importantly to issues of fidelity and adiabaticity during low-level vibration excitations of ultracold atoms in optical lattices.

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Date submitted: 02 Feb 2020 Electronic form version 1.4