

Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Floquet topological insulator in an optical lattice with modulated lattice depth YANGQIAN YAN, TONY LEE, Indiana University-Purdue University Indianapolis — We propose a simple scheme to realize a Floquet topological insulator in an optical lattice by weakly modulating the lattice depth. When the modulation frequency resonantly couples the s and p bands, the Floquet Hamiltonian becomes topologically nontrivial. We map out the topological transition as a function of frequency and amplitude. We also confirm the bulk topology by finding edge states in a lattice with open boundary conditions. An advantage of our scheme is that the modulation amplitude can be relatively small, so the heating can be minimal.

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Date submitted: 28 Jan 2017

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