

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Strongly driven Floquet topological insulator in semiconductor quantum wells XUEDA WEN, CHING-KAI CHIU, Physics Department, UIUC, PHYSICS DEPARTMENT, UIUC COLLABORATION — Floquet topological insulator in a weak-field driven semiconductor quantum well was proposed most recently. In this article we extend the situation to strongly driving field, which can generate high-order harmonic resonances. With appropriate form of driving field, it is found that whether topological transition can happen depends on the number of resonances N we can observe. If N is odd, topological transition can happen; if N is even, topological transition cannot happen. This phenomenon may be observed in semiconductor quantum wells by applying a strongly oscillating magnetic field. In addition, our discussion can be extended to other systems such as p-wave superconductors and spin chains.

Xueda Wen
Physics Department, UIUC

Date submitted: 05 Nov 2011

Electronic form version 1.4