Spin-charge Separated Excitations in a Topological Insulator
DUNG-HAI LEE, YING RAN, ASHVIN VISHWANATH, University of California, Berkeley — We construct a simple, controllable, two dimensional model based on a topological band insulator. It has many attractive properties. The main conclusions are: (1) The quasiparticles exhibit spin-charge separation. (2) It suggests an alternative way to classify $Z_2$ topological insulator without resorting to the sample boundary. (3) The quasiparticle condensation triggers a phase transition from a spin liquid to an insulating easy-plane ferromagnet.