

CMP Seminar
Michigan State University

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Broken-symmetry states in topological insulators

Breaking the time-reversal symmetry (TRS) on the surface of a three-dimensional topological insulator (TI) transforms its metallic surface into a Chern insulator. The TRS-broken surface states are essential for many exotic emergent particles in condensed matter. In this talk, I will show broken TRS surface states of TI induced by magnetism and by light imaged with scanning microscopy and photoemission spectroscopy respectively. Our capability to manipulate mesoscopic magnetic structures as well as to shape ultrafast light pulses makes broken-symmetry states in TI promising platforms to simulate elusive fundamental particles such as magnetic monopoles and Majorana fermions.

Monday, February 16, 2015

4:10 p.m.

BPS 1400

Prof. Norman Birge - Host