Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Transport through Disordered Graphene Geometries in a Laser-Induced Floquet Topological State ARIJIT KUNDU, BABAK SERADJEH, HERBERT FERTIG, Indiana Univ - Bloomington — Driving a system periodically can induce non-trivial topological properties. In graphene, for example, irradiation with circularly polarized laser can open up topological band-gaps. If current is injected from a lead with Fermi energy within that gap, for an open geometry electronic transport is mediated by topologically protected edge states. By contrast, in a periodic geometry (e.g., a nanotube), transport is dominated by evanescent modes below and above the gap. We study transport through these systems in the presence of disorder, which can result in remarkably large localization lengths and near-critical behavior with increasing disorder strength.

Arijit Kundu
Indiana Univ - Bloomington

Date submitted: 12 Nov 2013 Electronic form version 1.4