

CONDENSED MATTER THEORY SEMINAR

Subject: **Strong Backscatterer at the Edge of a Two-dimensional Topological Insulator**

Speaker: **Dr. Junhui Zheng (Goethe-Universität Frankfurt)**

Date & time: **Friday, December 2nd, 2016 at 3:15 p.m.**

Venue: **Seminar room 1.114**

Abstract: We study the problem of a backscattering impurity coupled to the edge states of a two-dimensional topological insulator. In the regime where the backscattering potential is larger than the band gap and accounting for electron-electron interactions, it is shown that the system can be described as a resonant level coupled to the one-dimensional (1D) channel of interacting edge electrons. We discuss the relationship of this system to the model of a (structureless) impurity in a 1D interacting electron liquid. Differently from the latter, transmission is suppressed for both repulsive and weak to moderate attractive interactions in the resonant regime.

Ref: <https://arxiv.org/abs/1609.06227>, Jun-Hui Zheng and Miguel A.