Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Dark Excitons in Gapped Chiral Fermion Systems[1] XIAOOU ZHANG, WENYU SHAN, DI XIAO, Carnegie Mellon Univ — The radiative lifetime of excitons puts an intrinsic limit on the operation speed of optoelectronic devices. In this talk, we propose a new mechanism to realize dark exciton state based on gapped 2D chiral fermions. We further show that a gate voltage can be used to tune the lowest exciton state between dark and bright. This provides a pathway to experimental control of optical transitions.

[1]This work is supported by the Department of Energy, Basic Energy Sciences, Grant No. DE-SC0012509.

Xiaoou Zhang
Carnegie Mellon Univ

Date submitted: 09 Nov 2016 Electronic form version 1.4