

Condensed Matter Theory Center Seminar



Wednesday, March 28
11:00 am – 12:15 pm
2205 John S. Toll Physics Building

Liang Fu
MIT

“Topology of finite-lifetime quasiparticles and non-Hermitian quantum mechanics”

Abstract: Quasiparticles in many-body systems generally have a finite lifetime due to electron-electron, electron-phonon and electron-impurity scatterings. I will show that in small-gap systems, the decay of a quasiparticle can alter its energy-momentum dispersion significantly, for example, transform a two-dimensional Dirac point into a nodal arc that ends at topological exceptional points. Properties of finite-lifetime quasiparticles are naturally described by non-Hermitian Hamiltonians that include imaginary part of self energy.

Host: Brian Swingle and Tom Iadecola

Web: <http://www.physics.umd.edu/cmte/seminars.html>

