

Chez Pierre

Presents ...

Monday, December 2, 2019

12:00pm Noon

MIT Room 4-331

Chez Pierre Seminar

Alessandra Lanzara – University California, Berkeley

“The many faces of spin – orbit coupling and its with superconductivity”

Spin orbit coupling, an elegant manifestation of relativistic effect in solids, has been at the center of discussion in condensed matter physics over the past decade. New topology, new particles, broken symmetries, and exotic phases of matter have all been recently revealed and explained as the results of such interactions. One of the most fascinating examples is the impact that spin orbit coupling can have on superconductivity, from promotion and stabilization of the superconducting phase upon enhancement of the strength of such interaction to the appearance of exotic quasiparticles, the Majorana bound states, and topological superconductivity.

In this talk I will present an overview on the state of the art of spin-orbit coupling in condensed matter physics, with main focus on superconductivity. I will present our recent findings on the presence of a strong spin momentum locking in strongly correlated cuprates superconductors and discuss what the origin and implication of such interaction could be for superconductivity.

