Speaker: Oskar VAFEK (Florida State University)

Title: Graphene bilayers: continuum field theory and topology of the narrow bands

Abstract: I will present a pedagogical derivation of the effective continuum theory for graphene bilayers, systematically expanding in real space gradients of the slow fermion fields and the atomic displacements, allowing for an arbitrary inhomogeneous smooth lattice deformation, including a twist. I will also review the topology of the narrow bands by constructing a smooth gauge throughout the moire Brillouin zone. Time permitting, I will also discuss some of the strong coupling expansion results by projecting the Coulomb interaction into the narrow bands.