

Chez Pierre

Presents ...

Monday, April 23, 2012

12:00pm

MIT Room 4-331



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“An unexpected turn for twisted graphenes”

Twisted graphenes are a family of multilayer graphenes in which the crystallographic axes of neighboring layers are rotated by angles $\theta \neq n\pi/3$. Experimentally the misalignment is associated with a reduction of the energy scale for coherent interlayer electronic motion relative to its known value for Bernal stacked graphenes and for related multilayer graphenes where $\theta = n\pi/3$. The microscopic origin and nature of this reduction is attracting significant theoretical interest. In this work we focus on the physics for small rotation angles, a regime where a continuum treatment is thought to be valid, and find that rotational anisotropy in the interlayer coupling Hamiltonian plays an unexpected role by selecting one of two geometrically distinct electronic states for the coupled system. This talk will discuss the topological classification of these states and their spectral signatures.