Condensed Matter Theory Center Seminar

CMTC

Junhyun Lee
Harvard

"Wess-Zumino-Witten Terms in Graphene Landau Levels"

Abstract: In this talk, I will consider the interplay between the antiferromagnetic and Kekulé valence bond solid orderings in the zero energy Landau levels of neutral monolayer and bilayer graphene. In particular, I will establish the presence of Wess-Zumino-Witten terms between these orders and present two independent proofs. This topological field theory for the two order parameters implies that their quantum fluctuations are described by the deconfined critical theories of quantum spin systems. I will also present implications for experiments, including the possible presence of excitonic superfluidity in bilayer graphene.

Reference: Phys. Rev. Lett. 114, 226801 (2015)

Host: Jay Sau

Web: http://www.physics.umd.edu/cmtc/seminars.html

physics
University of Maryland