Service de Physique de l'Etat Condensé
SÉMINAIRE

******

Mercredi 14 novembre 11h00

Orme des Merisiers SPEC Salle Itzykson, Bât.774

The effect of a single impurity on the local density of states in monolayer and bilayer graphene

Cristina Bena

SPHT

We analyze the effect of a single localized impurity on the local density of states in mono- and bilayer graphene. We show that for monolayer graphene the Friedel oscillations generated by intranodal scattering of quasiparticles obey an inverse-square law, while those generated by internodal scattering obey an inverse law. For bilayer graphene we find that both oscillations obey an inverse law. We discuss how these signatures can be observed in Fourier transform scanning tunneling spectroscopy (FTSTS) experiments, in particular how one can experimentally distinguish between monolayer and bilayer graphene, as well as between localized and extended impurities. We also show that in general, FTSTS spectra contain information not only about the band structure, but also about the underlying Hamiltonian of two-dimensional systems.

Le cafe sera servi 10 minutes avant
Contact : guenaelle.jasmin-lebras@cea.fr - Tel : +33 1 69 08 19 48/ 72 49
http://www-drecam.cea.fr/spec/Phocea/Vie_des_labos/Seminaires/index.php