ID de Contribution: **58** Type: **Non spécifié**

Curvature effects on the graphene optical properties

We formulate out-of-plane displacements of graphene as a spatial-curvature and we obtain the corresponding Dirac equation for a general geometry. An analytical solution of the Dirac equation in a curved space for a general deformation along one spatial direction is derived, and it amounts to an extra phase in the electron wavefunction. This can be explored to produce interference devices of the Aharonov-Bohm type. For periodic deformations, the quantization rule for the energy levels is found from this phase. In this situation, the calculated optical conductivity for curved graphene, obtained from the Kubo Formula, can show an enhancement up to one order of magnitude in respect of flat graphene due to curvature effects. In collaboration with A. J. Chaves, O. Oliveira and T. Frederico

Author: Dr DE PAULA, Wayne (Instituto Tecnologico de Aeronautica)

Orateur: Dr DE PAULA, Wayne (Instituto Tecnologico de Aeronautica)