

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Plasmon Excitations for a Coulomb-coupled Graphene Layer and a Thick Conductor GODFREY GUMBS, Hunter College, CUNY and Donostia International Physics Center (DIPC), ANDRII IUROV, University of New Mexico and Hunter college, CUNY, NORMAN HORING, Stevens Institute of Technology — Self-consistent field theory is used to obtain the plasmon dispersion relation of monolayer graphene which is Coulomb coupled to a thick conductor. We calculate numerically the undamped plasmon excitation spectrum for arbitrary wave number. For gapped graphene, both the low-frequency (acoustic) and high frequency (surface) plasmons may lie within the opening within the particle-hole region. Additionally, we obtain plasmon excitations in a region of the frequency-wave vector space which does not exist for free standing gapped graphene.

Godfrey Gumbs
Hunter College, CUNY and Donostia International Physics Center (DIPC)

Date submitted: 27 Oct 2014

Electronic form version 1.4