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Abstract for an Invited Paper for the MAR12 Meeting of the American Physical Society

Electron-electron interactions in doped graphene sheets¹ MARCO POLINI, NEST, Istituto Nanoscienze-CNR

In this talk I will review some of the most important electronic properties of graphene. I will first discuss the appearance of plasmaron satellite bands in both angle-resolved photoemission [1] and STM spectra [2,3], emphasizing the important role of the sublattice pseudospin degree of freedom. I will then illustrate some unusual features, which appear only beyond the widely used Random Phase Approximation, characterizing plasmons and Drude weight of the electron gas in this material [4].

- [1] A. Bostwick et al., Science 328, 999 (2010).
- [2] V.W. Brar et al., Phys. Rev. Lett. 104, 036805 (2010).
- [3] A. Principi, M. Polini, and A.H. MacDonald, to be submitted
- [4] S.H. Abedinpour et al., Phys. Rev. B 84, 045429 (2011).

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