

Abstract Submitted
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Internal mobility edge in doped graphene: frustration in a renormalized lattice GERARDO NAUMIS, Depto. de Física-Química, Instituto de Física, UNAM — We show that an internal localization mobility edge can appear around the Fermi energy in graphene by introducing impurities in the split-band regimen, or by producing vacancies in the lattice. The edge appears at the center of the spectrum and not at the band edges, in contrast with the usual picture of localization. Such result is explained by showing that the bipartite nature of lattice allows to renormalize the Hamiltonian, and the internal edge appears because of frustration effects in the renormalized lattice [1]. The size in energy of the spectral region with localized states is similar in value to that observed in narrow gap semiconductors. [1] G.G. Naumis, Phys. Rev. B 76, 153403 (2007).

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