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STM signatures for magnetic impurities in graphene BRUNO UCHOA, University of Illinois at Urbana-Champaign, L. YANG, S.-W. TSAI, University of California at Riverside, N. M. R. PERES, University of Minho, Portugal, A. H. CASTRO NETO, Boston University — Graphene is a two dimensional allotrope of carbon, whose elementary excitations are massless Dirac fermions which propagate ballistically in the submicron scale. With the adsorption of adatoms, such as transition metals, or simple molecules, the formation of local magnetic moments in graphene can be controlled by the application of a gate voltage [1], making graphene a potential candidate for spintronics. Unlike semiconductors, where the location of the magnetic impurities is random, in graphene the adatoms can be positioned by a scanning tunneling microscope (STM), allowing the construction of magnetic lattices. In this seminar, I will discuss the STM signatures for local magnetic impurities in graphene and promissing applications for spintronic devices. [1]B. Uchoa et al., PRL 101 026805 (2008).

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