

Abstract Submitted
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Magnetism in bulk and finite size graphene multilayers and its effect on the band gaps¹ BHAGAWAN SAHU, HONGKI MIN, SANJAY BANERJEE, ALLAN MACDONALD, University of Texas at Austin — In this talk, we will address the edge state magnetism and the resulting modulation of band gaps induced by quantum confinements in multilayer graphene ribbons and flakes. The magnetism arising from random point defects such as vacancies in bulk graphene layers will also be presented. The robustness of magnetism with respect to the edge disorder and the saturating agents in finite size graphene layers and with respect to the defect concentrations in bulk graphene layers will be discussed. A numerical approach based on density functional theory which uses plane-wave basis set and pseudopotentials for ion-electron interactions will be used for elucidating the complex interplay of magnetism, external electric field applied perpendicular to the layers and the resulting band gaps.

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Bhagawan Sahu
University of Texas at Austin

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