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Formation of Localized Magnetic States on Adatoms in Uniaxially Strained Graphene ANAND SHARMA, VALERI KOTOV, University of Vermont, Burlington — We investigate the effect of applied uniaxial strain on the formation of localized magnetic states on adatoms in graphene. In the framework of the single impurity Anderson model, we systematically analyze the interplay between the anisotropic (strain-induced) nature of the Dirac fermions and the on-site Hubbard interaction. We numerically calculate the polarization of the electrons in the localized orbital within the mean-field self-consistent scheme. A phase diagram is obtained, containing non-magnetic as well as large magnetic regions, which can find prospective applications in the field of carbon-based spintronics.

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