Abstract Submitted
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The correct solution for strain-induced pseudo vector potentials in graphene ALEXANDER L. KITT, Boston University, Boston, MA, VITOR M. PEREIRA, National University of Singapore, Singapore, ANNA K. SWAN, BENNETT B GOLDBERG, Boston University, Boston, MA — Prior calculations of the strain-induced pseudo vector potential considered only the change in the nearest neighbor hopping energy in their derivations [1,2]. Here we show that including lattice deformations introduces new terms of the same order in strain. These terms are different at each K point, causing each population of electrons to feel different strain induced pseudo magnetic fields. We use isotropic strain, a situation where lattice deformations solely determine the pseudo vector potential, to illustrate the conceptual importance of these new terms. Finally, we exhibit how the additional terms force us to rethink the strain geometries that were previously thought to generate particular pseudo magnetic fields. [1] A.H. Castro Neto, et al. *Rev. Mod. Phys.* **81**, 109 (2009). [2] M.A.H. Vozmediano, M.I. Katsnelson, and F. Guinea, Phys. Rep. **496**, 109 (2010).

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