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Symmetry breaking of Graphene in the presence of B and N impurities ERIKA PUTZ, JAIME BOHORQUEZ, HANSIKA SIRIKUMARA, MOHAMMED ALABOODI, THUSHARI JAYASEKERA, Southern Illinois University Carbondale — Controlled chemical doping is a promising approach to overcome a major obstacle of applications of graphene in digital electronics; the vanishing bandgap at the Dirac point. Recent experiments suggest that Boron (B) and Nitrogen (N) islands in graphene lattice will induce a sizable gap in its electronic bands. In this presentation, we will discuss interesting symmetry breaking properties that would show zero band gap, even in the presence of impurity atoms. Our findings are consistent with the already reported results, and additional features of the symmetry breaking will be discussed.

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