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**Magnetic Impurities In Graphene** FEIMING HU, TIANXING MA, HAIQING LIN, Department of Physics, The Chinese University of Hong Kong, Hong Kong, JAMES E. GUBERNATIS, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico — We present a quantum Monte Carlo study of magnetic atoms embedded in a graphene sheet. We consider the hybridization between magnetic impurity atoms and carbon atoms in the graphene, which can be well described by the Anderson impurity model. We calculate the magnetic momentum and spin susceptibility of the impurity by tuning Coulomb interactions, temperature and chemical potentials. Furthermore the effective momentum (screened momentum) is studied in detail by correlation functions between the impurity and carbon atoms. Since system's magnetic and conducting properties depend on the arrangements of impurities, we investigate various kinds of impurity embedding configurations and make comparisons among them.

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