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**Magnetism in graphene nanoislands and nanovoids** JUAN JOSE PALACIOS, JOAQUIN FERNANDEZ-ROSSIER, Universidad de Alicante, LUIS BREY, ICMM-CSIC — The rules to predict the magnetic state of both graphene nanoislands and nanovoids in otherwise perfect graphene systems are presented. We discuss how the shape of the island or void, the associated imbalance in the number of atoms belonging to the two graphene sublattices, the existence of zero-energy states, and the total and local magnetic moment are intimately related. We consider electronic interactions both in a mean-field approximation of the one-orbital Hubbard model and with density functional calculations. The magnetic properties of nanometer-sized graphene structures with triangular and hexagonal shapes terminated by zigzag edges happen to be drastically different[1]. In the case of voids in semiconductor ribbons, we study the magnetism associated to a single void and the magnetic interactions developed between them[2]. [1] J. Fernández-Rossier and J. J. Palacios, Phys. Rev. Lett. **99**, 177204 (2007). [2] J. J. Palacios,J. Fernández-Rossier, L. Brey, in preparation.

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