

Abstract Submitted  
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**Low density ferromagnetism in a biased bilayer graphene**<sup>1</sup> TOBIAS STAUBER, Instituto de Ciencia de Materiales de Madrid (CSIC), EDUARDO CASTRO, CFP and Departamento de Fisica, Faculdade de Ciencias Universidade do Porto, NUNO PERES, NUNO SILVA, Centro de Fisica e Departamento de Fisica, Universidade do Minho — We compute the phase diagram of a biased graphene bilayer. The existence of a ferromagnetic phase is discussed with respect both to carrier density and temperature. We find that the ferromagnetic transition is first order, lowering the value of  $U$  relatively to the usual Stoner criterion. We show that in the ferromagnetic phase the two planes have unequal magnetization and that the electronic density is hole like in one plane and electron like in the other.

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