Contribution Title:	THE 2D HUBBARD MODEL ON THE HONEYCOMB LATTICE
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Invited speaker:	Topical session
YRS seminar:	NO

We consider the 2D Hubbard model on the honeycomb lattice, as a model for a single layer graphene sheet in the presence of screened Coulomb interactions. At half filling and weak enough coupling, we compute the free energy, the ground state energy and we construct the correlation functions up to zero temperature in terms of convergent series; analiticity is proved by making use of constructive fermionic renormalization group methods. We show that the interaction produces a modification of the Fermi velocity and of the wave function renormalization without changing the asymptotic infrared properties of the model with respect to the unperturbed non-interacting case; this rules out the possibility of superconducting or magnetic instabilities in the ground state. We also prove that the correlations verify a Ward Identity similar to the one for massless Dirac fermions, up to asymptotically negligible corrections and an asymmetric renormalization of the charge velocity. An order by order construction of the ground state in the case of unscreened Coulomb interactions will also be reported.