Abstract Submitted
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Spin-liquid and magnetic phases in the anisotropic triangular lattice: the case of κ-$(ET)_2X$ FEDERICO BECCA, CNR and SISSA, LUCA TOCCHIO, University of Frankfurt, ALBERTO PAROLA, University of Como, CLAUDIUS GROS, University of Frankfurt — The two-dimensional Hubbard model on the anisotropic triangular lattice, with two different hopping amplitudes t and t', is relevant to describe the low-energy physics of κ-$(ET)_2X$, a family of organic salts. The ground-state properties of this model are studied by using Monte Carlo techniques, on the basis of a recent definition of backflow correlations for strongly-correlated lattice systems. The results show that there is no magnetic order for reasonably large values of the electron-electron interaction U and frustrating ratio $t'/t = 0.85$, suitable to describe the non-magnetic compound with X=$Cu_2(CN)_3$. On the contrary, Néel order takes place for weaker frustrations, i.e., $t'/t \sim 0.4 \div 0.6$, suitable for materials with X=$Cu_2(SCN)_2$, Cu[$N(CN)_2$]Cl, or Cu[$N(CN)_2$]Br.

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