

Abstract Submitted
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Functional renormalization group study of charge and spin orders of the extended Hubbard model in frustrated lattices HIROKAZU TAKASHIMA, SUMIO ISHIHARA, Tohoku University — In order to study for novel spin and charge orders in strongly correlated electron systems in frustrated lattices, we investigated extended Hubbard model in 2 dimensional (2D) checkerboard and triangular lattices using the functional renormalization group method (fRG) with an improved algorithm [1]. In this method, both the quantum effect and the geometrical frustration effect at finite temperature are taken into account properly. Non-monotonic temperature dependence of the spin susceptibility was observed both in the models. In a 2D isotropic triangular lattice at half-filling, divergence of the particle-particle channel vertex functions was observed in a region of the intermediate value of the on-site Coulomb interaction. We have also investigated the extended Hubbard model with long-range Coulomb interactions. A possibility of the ferromagnetic order and calculations with including the self-energy correction will be introduced. [1] H. Takashima, R. Arita, K. Kuroki, and H. Aoki, J. Phys.: Conf. Ser, **150**, 052261 (2009)

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