

Stripes and canted phases in charge-ordered system

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Analysis of the extended Hubbard model with additional nearest-neighbour Coulomb repulsion leads to the appearance of separated states including charge-ordered phase. The new grand canonical Monte Carlo simulations have shown a complex and highly nontrivial structure of the phase diagrams comprising the orderings with alternating charge density for the bipartite lattice in a wide range of electron concentrations. The most interesting findings have indicated the presence of stripes or canted domains of different charge-ordered phases and domain ordering of the Mott phase. The phase transitions observed have occurred in finite temperature range for finite-size systems on a square lattice [1]. The results show a possible classical nature of the phase separation and striped states for orders considered.

[1] G.Pawłowski, T.Kazmierczak, "Phase separation and critical phenomena in the charge ordered system", Sol. Stat. Commun. 145, 109 (2008);

13.4 cm

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