

# C D W   S T A T E S   I N   T H E   ( H A R D - C O R E ) B O S O N - F E R M I O N   M O D E L

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The system of coexisting local pairs and itinerant electrons described by the (hard-core) boson-fermion model have been studied. The model takes into account both the intersubsystem charge exchange coupling  $I_0$  as well as the density-density interaction  $V_0$ . Recently [1] we have shown within an extended mean-field approach that at  $T = 0$  the system considered can exhibit the superconducting (SC) and charge density wave (CDW) orderings as well as the so called charge Kondo state (CKS), which is characterized by a compensation of a local charge moment (isospin singlet). In this report we focus on the charge ordered phase which can be stabilized in the model by the density-density interaction  $V_0$  and on its coexistence with other phases (SC, CKS). The evolutions of some basic characteristics of the system as a function of the interaction parameters, the chemical potential and the total particle concentration are presented.

[1] M. Sidowski and S. Robaszkiewicz, Electron orderings in the (hard-core) boson-fermion model, Phys. Stat. Solidi (b), 244, 2527-2530, 2007