Abstract Submitted
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Non-local Coulomb correlations in metals close to a charge order insulator transition[1] JAIME MERINO, Universidad Autonoma de Madrid — Recent extensions of dynamical mean-field theory (DMFT) to clusters either in its real space (CDMFT) or momentum space versions (DCA) have become important tools for the description of electronic properties of low dimensional strongly correlated systems. In contrast to single site DMFT, short range correlation effects on electronic properties of systems close to the Mott transition can be analyzed. We have investigated the charge ordering transition induced by the nearest-neighbor Coulomb repulsion V in the 1/4-filled extended Hubbard model using CDMFT. We find a transition to a strongly renormalized charge ordered Fermi liquid at V_{CO} and a metal-to- insulator transition at $V_{MI} > V_{CO}$. Short range antiferromagnetism occurs concomitantly with the CO transition. Approaching the charge ordered insulator, $V < V_{MI}$, the Fermi surface deforms and the scattering rate of electrons develops momentum dependence on the Fermi surface.

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