

Abstract Submitted  
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**Magnetic and transport properties of f-site depleted Periodic Anderson Model** NATANAEL COSTA, Federal University of Rio de Janeiro, MAYKON ARAUJO, JOSE DE LIMA, Federal University of Piaui, THEREZA PAIVA, RAIMUNDO SANTOS, Federal University of Rio de Janeiro, RICHARD SCALETTAR, University of California - Davis — We will discuss Determinant Quantum Monte Carlo simulations for the Periodic Anderson Model on a square lattice in which the strongly correlated f-sites are depleted. When the depletion is random, the model is relevant to the magnetic properties of heavy fermion materials doped with non-magnetic ions. Here we investigate both random and non-random removal of f sites in order to get better insight into which of the effects of doping are due to disorder, and which are generic to any sort of site removal. We present results first for a single depletion, i.e. a Kondo-Hole, show how local singlets around the depleted site are broken, and the resulting effects on the magnetic susceptibility. When more sites are depleted, we provide evidence long range magnetic ordering can be induced. Our analyses for depletion of half the sites probes the existence of ferromagnetic long range order for both small and large values of hybridization. The examination of magnetic sublattice correlation functions provides evidence that magnetism is not entirely due to the remaining f-sites, but there is also a contribution from the weakly correlated c-electrons on the depleted sites. This research is supported by the Dept. of Energy grant number DE-NA0002908, and Brazilian agencies FAPERJ, FAPEPI and CNPq.

Natanael Costa  
Brazilian Physical Society

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