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Effects of correlated hybridization in the single-impurity Anderson model[1] VALTER LÍBERO, RODRIGO VEIGA, Sociedade Brasileira de Física — The development of new materials often dependents on the theoretical foundations which study the microscopic matter, i.e., the way atoms interact and create distinct configurations. Among the interesting materials, those with partially filled d or f orbitals immersed in nonmagnetic metals have been described by the Anderson model, which takes into account Coulomb correlation (U) when a local level (energy E_d) is doubled occupied, and an electronic hybridization between local levels and conduction band states. In addition, here we include a correlated hybridization term, which depends on the local-level occupation number involved. This term breaks particle-hole symmetry (even when $U + 2E_d = 0$), enhances charge fluctuations on local levels and as a consequence strongly modifies the crossover between the Hamiltonian fixed-points, even suppressing one or other. We exemplify these behaviors showing data obtained from the Numerical Renormalization Group (NRG) computation for the impurity temperature-dependent specific heat, entropy and magnetic susceptibility. The interleaving procedure is used to recover the continuum spectrum after the NRG-logarithmic discretization of the conduction band.

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