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Low energy properties of the two-impurity Anderson model LI-JUN ZHU, JIAN-XIN ZHU, Los Alamos National Laboratory — We investigate the low energy properties of the two-impurity Anderson model with the complete-Fock-space numerical renormalization group method. From the calculated spectral function, correlation functions and self-energy, two energy scales are identified, as onsets of the Kondo resonance and the Fermi liquid behaviors. With the tuning of the RKKY interaction, the latter is uniformly suppressed to zero in the particle-hole symmetric case, resembling the Jones-Varma quantum critical point. In cases with the particle-hole asymmetry, an inter-impurity hybridization term is generated, which turns the quantum critical point into a crossover. Similar behaviors are found with either a direct hopping term or a local magnetic field, to lift the parity or spin degeneracies, respectively. Application to the Anderson lattice model is also presented.

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