SUPERCONDUCTIVITY IN THE HUBBARD MODEL NEAR THE MOTT TRANSITION

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9.7 cm

Within the Hubbard model we analyse d-pairing superconductivity induced by a weak intersite attraction in a presence of a strong Coulomb onsite repulsion U, which may eventually drive a system towards the Mott transition. Effect of the local interaction is investigated using the dynamical mean field equations. Such a selfconsistent treatment is known to be exact in the limit of infinite spatial dimensions but it also represents a good approximate method for studying the finite (e.g. 2D) systems.
We discuss the single particle spectrum of a normal and superconducting phases for several values of U. Other related quantities, like the optical conductivity and Pauli susceptibility show up some peculiarities which may be relevant to a description of the high T_C materials.

13.4 cm

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