LOW-TEMPERATURE FERROMAGNETISM IN A WEAKLY DOPED HUBBARD MAGNET

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S u m m a r y

In the framework of the diagrammatic method with self-consistent field, the maximum on the temperature dependence of the susceptibility of a weakly doped narrow-band Hubbard magnet below the Curie temperature $T_{\rm C}$ is predicted. By numerical calculations, it is proved that it appears at small hole concentrations n_h. In this case, the temperature dependence of the magnetization $M(T)$ has a typical Fermi-like shape with the point of inflection at a temperature $T_{\rm inf}$. The approximate solution of the system of equations for the mean spin and the chemical potential gives the Schottky susceptibility typical of a two-level system with a gap of order of $n_h(1-n_h)W$, where W is the bandwidth. This behavior reflects the existence of two subbands with up- and down-spins. It may be observed experimentally in the surface layers of oxide metal nanoparticles with narrow bands and a weak oxygen nonstoichiometry.