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On interplay between the magnetic susceptibilities of localized and itinerant electrons in hole-doped HTSCs

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Abstract

In the framework of the singlet-correlated motion of holes over oxygen sites in CuO 2 layers, a formula for the dynamic spin susceptibility has been derived taking into account the strong correlation between the magnetizations of the spins of the collective holes and localized moments on copper sites. The calculated behavior of the imaginary part of the susceptibility as a function of the frequency and wave vector is consistent with the available experimental data on the inelastic neutron scattering. The plot of the dispersion of the collective spin modes over the entire Brillouin zone is proposed. © Nauka/Interperiodica 2006.

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