ELECTRICAL CONDUCTIVITY FOR THE STRONGLY CORRELATED AND HYBRIDIZED HUBBARD BAND

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9.7 cm

Single strongly correlated Hubbard band (f,d electrons type) which hybridizes with the conduction band (s,p electrons type) was considered. The single band Hubbard hamiltonian was projected on the one particle alloy hamiltonian. Resulting stochastic alloy fields have mixed (charge and magnetic moment) single particle scalar character. The one particle alloy problem was formulated within Modified Alloy Analogy scheme (MAA) recently proposed by Herrmann and Nolting (Phys. Rev. **B53**, 10579, 1996) and solved with the use of Coherent Potential Approximation (CPA). Obtained from the CPA procedure the self-energy is uniform in the **k**-space and spin dependent. Kubo-Greenwood formula was generalized and applied for DC conductivity calculations. As an example the electrical conductivity for magnetic *bcc* and fcc systems for different number of electrons in the band, different values of Coulomb repulsion U and hybridization V as a function of temperature ($[0, T_c]$) was calculated and discussed. Obtained results are similar to that obtained for the band electrons which undergoes scattering on the localized spin system (spin disorder resistivity).

13.4 cm

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