

NON-QUASIPARTICLE STATES IN HALF-METALLIC FERROMAGNETS

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Anomalous magnetic and electronic properties of the half-metallic ferromagnets (HMF) are discussed. A general concept of the HMF electronic structure which takes into account the most important correlation effects from electron-magnon interactions, that is, the spin-polaron effects, is presented. Special attention is paid to the so called non-quasiparticle (NQP), or incoherent, states which are present in the gap near the Fermi level. Manifestations of NQP in electronic density of states, tunneling transport, nuclear magnetic relaxation, core-level spectra and other properties of HMF are considered. First-principle calculations of the NQP-states for various half-metallic ferromagnets within the local-density approximation plus dynamical mean field theory (LDA+DMFT) are reviewed.