Theoretical Model Study of Magnetoresistance in CDW Ordered CMR Manganites

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Abstract: We report here a microscopic model study for colossal magnetoresistive manganite (CMR) systems. We consider an interplay between the ferromagnetic (FM) and charge ordered (CO) states of the manganite systems in a Kubo-Ohata type double exchange (DE) model. The model Hamiltonian is solved using Zubarev's Green's function technique. The temperature dependent FM and CO order parameters are calculated and computed numerically. We have also calculated and studied the temperature dependent electrical resistivity of the manganite system. The temperature dependence of magnetoresistivity is discussed.

Keywords: Colossal magneto-resistance; charge ordering; electrical resistivity

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