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Korringa-like relaxation in *A*-site ordered manganites S. SCHAILE, H.-A. KRUG VON NIDDA, A. LOIDL, J. DEISENHOFER, Experimentalphysik V, Center for Electronic Correlations and Magnetism, Institute for Physics, Augsburg University, D-86135 Augsburg, Germany, T. NAKAJIMA, Y. UEDA, Material Design and Characterization Laboratory, Institute for Solid State Physics, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8581, J — Half doped manganites exhibiting charge- and orbital ordering transitions are paradigm materials for studying colossal magnetoresistance, the existence of ferroelectricity or Zener polaron-type features. We report on high-temperature electron spin resonance studies of *A*-site ordered and disordered $ABaMn_2O_6$ $A = Y, Sm, La$. We find a Korringa-like spin-relaxation above the charge-ordering transition and extending up to 1000 K in the *A*-site ordered antiferromagnetic systems $A = Y, Sm$, a unique feature for a truly metallic state not having been reported in manganites before. In agreement with the ESR intensity this finding suggests that the ESR signal stems from Mn^{4+} core spins which relax via the quasi-delocalized e_g electrons. In contrast in the disordered AFM and the ferromagnetic samples no Korringa relaxation is observed. Hence, the conductivity does not significantly influence the spin relaxation in those compounds.

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