

## SPIN DISORDER IN Fe-DOPED MANGANITES

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$\text{Ln}_{0.7}\text{M}_{0.3}\text{MnO}_3$  compounds are well known ferromagnets mediated by a double exchange mechanism. As Mn atoms are substituted by Fe in the ratio  $\text{Mn}_{1-x}\text{Fe}_x$  the magnetic structure dramatically changes, because the ferromagnetic double exchange chain is broken. At low Fe concentrations all compounds are magnetically ordered. For intermediate values ferro (FM), antiferro (AF) and paramagnetic (PM) phases coexist in a large temperature range, and at  $x \cong 0.2$  spin or cluster-glass behaviour is found. Magnetization, Mössbauer, polarized and low angle neutron scattering as well as muon spin relaxation experiments have been performed on  $0 \leq x \leq 0.30$  compounds showing the transit from long range ferromagnetism to spin glass. Coexistence of FM and AF clusters of different size has been found for all doped compounds.