

Abstract Submitted  
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**La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> Epitaxial Films on SrTiO<sub>3</sub>(001): Interface Effects & Electronic Distribution** J.-S. LEE, D.A. ARENA, National Synchrtron Light Source, Brookhaven National Lab, C.-C. KAO, Stanford Synchrotron Radiation Light Source, SLAC, P. YU, Dept. of Physics, UC-Berkeley, R. RAMESH, Dept. of Physics, UC-Berkeley and Mater. Sci. Div., LBNL — La<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3</sub> is an attractive material for incorporation into spin-dependent electronic devices and optimally doped La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> (LSMO) is among the most widely studied colossal magnetoresistance materials. Using a combination of soft x-ray absorption spectroscopy and hard x-ray reflectivity, we found that epitaxial films of LSMO grown on STO(001) substrates exhibit an inhomogeneous 3d electron-distribution along surface normal direction, divided between an intermediate layer (enriched in Mn<sup>3+</sup>) and a nominal mixed-valence layer (Mn<sup>3+</sup> & Mn<sup>4+</sup>) of LSMO. This electronic redistribution near the interface is in turn correlated with an unusual remanent magnetic state.

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