Dynamical mean field study of Manganite superlattices CHUNG-WEI LIN, ANDREW MILLIS, Columbia university — A theoretical study of 001 manganite superlattices $[LaMnO_3]_n[SrMnO_3]_m$ is presented. The superlattice is defined by different charges of La and Sr; the conduction band is modelled via a nearest neighbor tightly binding model. The interaction between conduction electrons and localized t_{2g} spins is treated by the dynamical mean field approximation, while the long range Coulomb interaction is taken into account by the Hartree approximation. The magnetic phase diagram and physical properties including charge distribution, dc and optical conductivity are calculated at different layer geometries. A range of physical parameters is explored. The research is supported by Columbia University MRSC (CL) and DOE-ER46169(AM)

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