

Abstract Submitted
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Strain's role at the 4-point phase boundary of $\text{La}_{0.4}\text{Sr}_{0.6}\text{MnO}_3$ ¹ T. ZAC WARD, Oak Ridge National Laboratory, ANTHONY WONG, University of Tennessee, HANGWEN GUO, Louisiana State University, CHRISTIANNE BEEKMAN, ZHENG GAI, Oak Ridge National Laboratory — Bulk $\text{La}_{0.4}\text{Sr}_{0.6}\text{MnO}_3$ shows a 4-point phase boundary where ferromagnetic metal, paramagnetic metal, canted antiferromagnetic metal, and A-type antiferromagnetic metal phases meet at 240K. The strong spin-charge-lattice coupling inherent in these materials make this a prime candidate for exploring the impact of interfacial strain effects on phase behavior. We use pulsed laser deposition to grow single crystal thin films of this composition on several different substrates to induce a range of epitaxial strains. We will present data showing a high level of tunability in resistive and magnetic properties and show the results as being directly tied to changes arising from shifts in the orbital occupancy.

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