Abstract Submitted
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Low-Temperature Magnetic Force Microscopy studies of LCMO and LSMO films on BTO substrates[1] ALFRED LEE, ALEX DE LOZANNE, Department of Physics, The University of Texas at Austin, XAVIER MOYA, NEIL D. MATHUR, Department of Materials Science, University of Cambridge, Cambridge, CB2 3QZ, UK — Strong strain-mediated magnetoelectric coupling arises at epitaxial planar interfaces, e.g. between ferromagnetic films and ferroelastic substrates [1]. Discontinuous changes in strain at the ∼190 K rhombohedral-orthorhombic transition of a ferroelastic $BaTiO_3$ substrate produce discontinuous changes in the macroscopic magnetizations of ferromagnetic epitaxial thin films of $La_{0.7}Ca_{0.3}MnO_3$ or $La_{0.67}Sr_{0.33}MnO_3$ [1]. In order to explore the microscopic changes through this transition, we will present magnetic force microscopy data for the two systems above and below ∼190 K. [1] M. K. Lee *et al.*, *Appl. Phys. Lett.* **77** (2000) 3547; W. Eerenstein *et al.*, *Nature Materials* **6** (2007) 348

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