

Abstract Submitted  
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**Fluid-like conducting regions in solid manganite thin films**<sup>1</sup> RAFIYA JAVED, HYOUNGJEEN JEEN, AMLAN BISWAS, Department of Physics, University of Florida — Hole-doped manganese oxides (manganites) exhibit a fluid-phase separated state in which the conducting and ferromagnetic phase (FMM) behaves like a fluid embedded in an insulating background phase [1]. While the manganite remains a solid, its local electrical properties behave as a fluid. The fluid behavior of the conducting regions can be tested by observing the effect of an electric field on the shape of the FMM regions. This change in shape is expected to result in anisotropic resistivity. This property was tested by designing microstructures of the manganite film, which simplify the experiment by localizing the electric field to a region the size of the FMM regions. We are testing for possible magnetic anisotropy since the conducting regions are also ferromagnetic. We will also discuss the size effect on the magnetic properties. [1] Dhakal et. al., Phys. Rev. B 75, 092404 (2007)

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