

Abstract Submitted  
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**Magnetism**

**at**

**Amorphous Oxide Interfaces** SPENCER TOMARKEN, ANDREA YOUNG, Massachusetts Institute of Technology, SANG WOON LEE, ROY GORDON, Harvard University, RAYMOND ASHOORI, Massachusetts Institute of Technology — Recent work has shown that a mobile interfacial electron gas is created when certain amorphous transition metal oxides are grown on strontium titanate. We report torque magnetometry and transport measurements on a series of STO-based oxide heterostructures with amorphous overlayers grown by atomic layer deposition. We observe in-plane ferromagnetic ordering that is qualitatively similar to results observed in crystalline LAO/STO samples. We will discuss the implications of these results on the origin of magnetism in both polar and amorphous oxide interfaces.

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