

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Enhanced magnetization in ultrathin manganite layers via structural “delta-doping” of octahedral rotations**<sup>1</sup> EUN JU MOON, Drexel University, BRIAN J. KIRBY, National Institute of Standards and Technology, STEVEN J. MAY, Drexel University — The design of rotations and distortions of the corner-shared  $BO_6$  octahedra has emerged as an exciting platform to control electronic or magnetic behavior in  $ABO_3$  perovskite heterostructures. Recent work has shown that purely structural effects can be used to spatially confine magnetism in oxide heterostructures and point to the design of rotational gradients as routes to realize novel electronic or ferroic states in oxide superlattices [Nat. Comm. **5**, 5710 (2014)]. Here, we demonstrate a structural “delta doping” approach for controlling magnetism in ultrathin layers within isovalent manganite superlattices. Polarized neutron reflectivity and temperature dependent magnetization measurements are used to correlate enhanced magnetization with local regions of suppressed octahedral rotations in the heterostructures.

<sup>1</sup>This work was supported by the U. S. Army Research Office under grant No. W911NF-15-1-0133.

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Date submitted: 06 Nov 2015

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