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**Emergent ferromagnetism in NdMnO3/SrMnO3 superlattices** ARTUR GLAVIC, STUART CALDER, Quantum Condensed Matter Division; Oak Ridge National Laboratory, VALENTINO COOPER, HEMANT DIXIT, Materials Science and Technology Division; Oak Ridge National Laboratory — The phenomenon of ferromagnetism evolving in digital superlattices of two antiferromagnets LaMnO3[2n]/SrMnO3[n] has been well established [1-2]. We show that this interface effect can be observed in systems with different rare earth manganites as well, exemplified in the Nd system grown on LSAT and TbScO3 substrates. With polarized neutron reflectometry we prove that not only 2/1 unit cell samples become ferromagnetic but that interface ferromagnetism can be induced whenever a single layer of SrMnO3 is introduced in the NdMnO3 system. These results show that the strain state of the superlattice system is of much less importance for the induced magnetization then the Mn3+/Mn4+ electronic state.

[1] P. Salvador, et al., **Appl. Phys. Lett.** 75, 2638 (1999).
[2] S. Dong, et al., **Phys. Rev. B** 86, 205121 (2012).

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