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**Incipient ordering of Nd in  $\text{La}_{1.6-x}\text{Nd}_{0.4}\text{Sr}_x\text{CuO}_4$  at low temperatures** KATHERINE WOOLEY, ERICA CARLSON, Purdue University — We consider a new possible spin order in a lanthanum-based cuprate superconductor  $\text{La}_{1.6-x}\text{Nd}_{0.4}\text{Sr}_x\text{CuO}_4$  that is known to have charge and spin stripe order coexisting, and indeed somehow related, with superconductivity. In lanthanum-based cuprates, it is commonly assumed that the effective spin coupling between the CuO planes averages to zero. In this case, at low temperatures, the Nd moments will mimic the ordering of those Cu moments that they are directly coupled to through the Cu-O-Nd bonds, and the Nd ordering is then used to infer the stripe ordering. However we argue that due to the tilting of the oxygen octahedra in the LTT phase, the Nd are symmetry-allowed to couple to both their neighboring CuO planes, thus mediating a spin coupling between the CuO planes. We show that ferromagnetic moments along the stripes are the signature of this Nd coupling. Thus this new spin order could be detected by a peak near the ferromagnetic point (0,0) in an elastic neutron scattering experiment and may also affect the intensity of the third harmonic peak of the Cu spin order.

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