

Abstract Submitted
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Neutron Scattering Studies of Magnetic Structure and Excitations in $\text{Na}_{5/8}\text{MnO}_2$ ROBIN CHISNELL, NIST Center for Neutron Research, XIN LI, XIAOHUA MA, MIT, DONG SU, Brookhaven National Laboratory, LEI LIU, SHYUE PING ONG, HAILONG CHEN, ALEXANDRA TOUMAR, MIT, JUAN-CARLOS IDROBO, Oak Ridge National Laboratory, YUECHUAN LEI, MIT, JIANMING BAI, FENG WANG, Brookhaven National Laboratory, JEFFREY LYNN, NIST Center for Neutron Research, YOUNG LEE, GERBRAND CEDER, MIT — Na_xTMO_2 (TM=transition metal) materials consist of alternating layers of Na and TM ions with the TM ions arranged on a geometrically frustrated triangular lattice. Na can be easily and reversibly removed from these materials, making them of interest for application in rechargeable batteries and allowing for exploration of their rich phase diagrams as a function of Na concentration. Na ordering is an important factor in ground state selection, and is driven by electrostatic interactions in many Na_xTMO_2 systems. The series Na_xMnO_2 differs in that Na ordering is driven by a cooperative Jahn-Teller effect, due to the coexistence of Jahn-Teller active Mn^{3+} and non-active Mn^{4+} ions. We have recently shown the existence of a charge stripe ordering a in the material $\text{Na}_{5/8}\text{MnO}_2$ [1]. At low temperatures a magnetic stripe order also develops. We present neutron diffraction and inelastic scattering measurements and examine the details of the magnetic structure and excitations in the magnetic stripe ordered phase. [1] X. Li *et al.* Nature Mater. **13**, 586 (2014)

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