

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Unconventional spin-dynamics in a phase separate, weakly disordered perovskite manganite**<sup>1</sup> FENG YE, JAIME FERNANDEZ-BACA, PENGCHENG DAI, HYE-JUNG KANG, JEFFREY LYNN, CHENGLIN ZHANG, S.-W. CHEONG — The intense investigation of perovskite manganites has revealed a variety of fascinating properties. The phenomena known as phase separation, the coexistence at different length scales of ferromagnetic, charge/orbital order has been recently recognized as an intrinsic feature of several strongly correlated electron systems. Using inelastic neutron scattering, we have studied the spin dynamics of the archetypical material  $(\text{La,Pr})_{7/8}\text{Ca}_{3/8}\text{MnO}_3$ , where competing ground states coexist at low temperature. The low- $T$  spin wave excitations at  $H = 0$  and 2T are drastically different. We discuss this difference in terms of magnetic excitations from ferromagnetic clusters of different length scales.

<sup>1</sup>Supported by U.S. DOE under Contract No. DE-AC05-00OR22725 with UT/Battelle LLC.

Feng Ye  
Oak Ridge National Laboratory

Date submitted: 27 Nov 2007

Electronic form version 1.4