

Abstract Submitted  
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**Low energy excitations in multiferroic hexa-YMnO<sub>3</sub>**<sup>1</sup> ANDREI SUSHKOV, DENNIS DREW, Materials Research Science and Engineering Center, Department of Physics, University of Maryland at College Park, ADRIAN GOZAR, Brookhaven National Laboratory, MAXIM MOSTOVOY, Zernike Institute for Advanced Materials, University of Groningen, The Netherlands, GIRSH BLUMBERG, NARA LEE, SANG CHEONG, Rutgers Center for Emergent materials and Department of Physics and Astronomy, Rutgers University — In spite of many years of research, hexa-manganites continue to surprise us with their unusual magnetic and lattice properties which includes multiferroicity (antiferromagnetic + ferroelectric). The triangular arrangement of magnetic Mn ions gives rise to a highly frustrated magnetic interactions and allows coupling to the phonons. The recent discovery of a Gamma- point hybrid magnon-lattice mode in h-YMnO<sub>3</sub> by polarized inelastic neutron scattering (Pailhes et al, PRB 79, 134409 (2009)) rises a question about the identity of the coupled phonons. To answer that question, we have combine infrared and Raman spectra with symmetry analysis of magnons and phonons.

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