

Abstract Submitted
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Non-polar electromagnon in hexa-YMnO₃ J.R. SIMPSON, Towson University, A.B. SUSHKOV, H.D. DREW, University of Maryland, M. MOSTOVOY, University of Groningen, A. GOZAR, Brookhaven National Laboratory, G. BLUMBERG, N. LEE, S.-W. CHEONG, Rutgers University — Coupled magnon-phonon excitations in magnetic materials have been observed in multiferroic materials and involve the polar optical phonons. Such excitations may be more general, occurring in non-ferroelectric magnets and involving non-polar (Raman or silent) phonons. Temperature-dependent Raman spectra of low-frequency excitations in single-crystal h-YMnO₃ are measured using a triple-grating spectrometer. We compare the spectral intensity of magnons to changes in the Raman-active phonons above and below the Neel temperature. Raman and infrared experimental results on h-YMnO₃ demonstrate that the 5 meV hybrid mode observed in neutron scattering is an example of a Raman electromagnon.

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