

Abstract Submitted  
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**Low energy excitations in multiferroic Ca<sub>3</sub>CoMnO<sub>6</sub> in the far infrared.**<sup>1</sup> ANDREI SUSHKOV, H.D. DREW, University of Maryland, Y.J. CHOI, H.T. YI, S. LEE, S.W. CHEONG, Rutgers University — Ferroelectricity was recently discovered in Ca<sub>3</sub>CoMnO<sub>6</sub> (Y.J.Choi et al., PRL 100 (2008) 047601) which is a quasi 1 D spin up-up- down-down system. We report the results of infrared (5-250 cm<sup>-1</sup>) transmission study of multiferroic Ca<sub>3</sub>CoMnO<sub>6</sub> as a function of temperature T (3-300 K) and magnetic field H (0-8 T). Two peaks are observed at and below T<sub>N</sub> = 17 K. Narrow peak at 35 cm<sup>-1</sup> is observed at low T and is identified as the ground state feature. This feature is suppressed with raising T or in magnetic field and the other broad feature at 25 cm<sup>-1</sup> emerges. Neither peak is split or shifted by magnetic field. We will discuss the possible origin of these two excitations.

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