Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Magneto-Electric Coupling in Single Crystal Cu_2OSeO_3 Studied by a Novel Electron Spin Resonance Technique ALEXANDER MAISURADZE, Physics Institute, University of Zurich, Zurich, Switzerland, ALEXANDER SHENGELAYA, Department of Physics, Tbilisi State University, Tbilisi, Georgia, HELMUTH BERGER, DEJAN DJOKIĆ, Institute of Condensed Matter Physics, EPFL, Lausanne, Switzerland, HUGO KELLER, Physics Institute, University of Zurich, Zurich, Switzerland — The magneto-electric (ME) coupling on spin-wave resonances in single-crystal Cu_2OSeO_3 was studied by a novel technique using electron spin resonance combined with electric field modulation. An external electric field **E** induces a magnetic field component $\mu_0 H^i = \gamma E$ along the applied magnetic field **H** with $\gamma = 0.7(1)$ μT/(V/mm) at 10 K. The ME coupling strength γ is found to be temperature dependent and highly anisotropic. $\gamma(T)$ nearly follows that of the spin susceptibility $J^M(T)$ and rapidly decreases above the Curie temperature T_c. The ratio γ/J^M monotonically decreases with increasing temperature without an anomaly at T_c.

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Date submitted: 08 Nov 2012 Electronic form version 1.4