

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Effective magnetoelectric tensor of a composite material**<sup>1</sup> DAVID STROUD, MEHUL DIXIT, Department of Physics, The Ohio State University, Columbus, OH 43210 — We calculate the effective magnetoelectric coefficient tensor of a composite of two single-phase magnetoelectrics in which effect of strain is unimportant. We obtain exact relations for elements of the effective magnetoelectric coefficient tensor entirely in terms of the elements of the individual components, and the composite geometry. The problem is solved by a decoupling transformation that reduces the problem to finding the effective coefficients in a composite of the same geometry but with two *independent*, curl-free fields. The decoupling transformation is found to be identical to that used in the problem of composite thermoelectrics <sup>2</sup>. Details of the calculation will be presented.

<sup>1</sup>Supported in part by NSF MRSEC, DMR-0820414

<sup>2</sup>D. J. Bergman and O. Levy. Thermoelectric properties of a composite medium. J. Appl. Phys., 70:6821 - 6833, 1991

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Date submitted: 12 Dec 2012

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