Abstract Submitted
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**Properties of magnetoelectric susceptibility**[1] JUNYI ZHAI, JIEFANG LI, DWIGHT VIEHLAND, Virginia Tech, M.I. BICHURIN, Novgorod State University, Russia, VIRGINIA TECH TEAM, NOVGOROD STATE UNIVERSITY TEAM — The magnetoelectric (ME) susceptibility is the principle property of ME materials, determining the connection between polarization (or electric induction) and an external magnetic field. Since measurement of the ME susceptibility over a wide frequency range [1] and the design of new ME devices require more information about the ME susceptibility, the present work has focused on this property in detail. First, we consider the ME susceptibility as a complex parameter with both real and the imaginary parts, advancing a methodology for measurement of these values. Second, we have analyzed the ME susceptibility, for example a trilayer laminate composite of Terfenol-D/PZT, Terfenol-D, and found a maximum value of ∼3.5x10-7s/m in the electromechanical resonance range. In addition, we have studied the internal structure of the ME susceptibility: i.e., its dependencies on phase volume fractions, layer thickness, and choice of materials couple. Our results for the ME susceptibility will allow it to be more correctly used both as a fundamental materials property and also in potential ME device applications.
[1] M.I. Bichurin, V.M. Petrov,Yu.V. Kiliba, and G. Srinivasan. Phys. Rev. B 66, 134404 (2002).

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