

Abstract Submitted
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Temperature- and field-dependent inelastic light scattering studies of TbMnO₃¹ HARINI BARATH, MINJUNG KIM, S.L. COOPER, Dept. of Physics and Frederick Seitz Materials Research Laboratory, Univ. of Ill., Urbana-Champaign, M. RUBHAUSEN, Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany, D.N. ARGYRIOU, Hahn-Meitner Institut, Berlin, Germany — TbMnO₃ is one of several multiferroic materials that have coexisting magnetic and electric orders that are strongly coupled. Because it is exquisitely sensitive both to structural order and magnetic degrees of freedom, field-dependent inelastic light scattering measurements are ideally suited to studying magnetoelastic coupling and multiferroic phases in materials such as TbMnO₃. By carefully examining the temperature- and field-dependent evolution of new magneto-elastic modes in various phases of TbMnO₃, our study reveals several new features of the IC-C transition in TbMnO₃, including the co-existence of distinct structural phases in the intermediate field regime around the IC-C phase transition and evidence for dynamical fluctuations of the IC and C phases outside the established phase boundaries.

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