

Abstract Submitted
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Magnetic Phase Diagram of the Giant Magnetoelectric, DyMn₂O₅ W. RATCLIFF II, NIST, V. KIRYUKHIN, Rutgers University, M.A. KENZELMANN, John Hopkins University, S.-H. LEE, NIST, ROSS ERWIN, NIST, N. HUR, S. PARK, S.-W. CHEONG, Rutgers University — It has been recently found that DyMn₂O₅ develops a spontaneous electric polarization below the Neel ordering temperature. Furthermore, this spontaneous polarization can be switched through the application of a magnetic field. Several anomalies were also observed in the dielectric constant. We have performed neutron diffraction measurements on a single crystal of this material, and have found that anomalies in the dielectric constant and the polarization are correlated with magnetic transitions induced by field or temperature. During this talk, I will present the magnetic phase diagram of this system and show how it corresponds to the spontaneous polarization and anomalies in the dielectric constant.

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