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**Progress towards an electron electric dipole moment search in Europium-Barium Titanates** STEPHEN ECKEL, Yale University, ALEXANDER SUSHKOV, Harvard University, STEVEN LAMOREAUX, Yale University — We report on recent progress on a search for the electron's electric dipole moment (eEDM) using solid- state  $\text{Eu}_{0.5}\text{Ba}_{0.5}\text{TiO}_3$ . This material has many desirable properties including ferroelectricity below 200 K and paramagnetism above 1.8 K. When the sample has a non-zero electric polarization, the seven unpaired  $4f$  electrons of the  $\text{Eu}^{2+}$  ions in the lattice feel a large effective electric field of order 10 MV/cm in the direction of the polarization. This causes the electron spins to align with the electric polarization and generate a magnetization, which is measured using DC SQUID magnetometers. We will detail measurements of systematic effects along with recent results toward a measurement of the eEDM.

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