

Abstract Submitted
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Search for the electron's electric dipole moment with a cold molecular beam of ThO AMAR C. VUTHA, O. KEITH BAKER, Yale University, WESLEY C. CAMPBELL, Harvard University, DAVID DEMILLE, Yale University, JOHN M. DOYLE, GERALD GABRIELSE, YULIA V. GUREVICH, MAARTEN A.H.M. JANSEN, Harvard University, ACME COLLABORATION — We describe a method for an improved search for the electric dipole moment (EDM) of the electron, using a cold molecular beam of thorium monoxide (ThO). We identify the metastable H state in ThO as being highly sensitive to the CP-violating EDM of the electron. ThO in a beam is shown to have excellent properties for rejection of systematic errors and for efficient state preparation and detection. We report on recent progress in the production of cold ThO molecules and measurement of the lifetime of the H state.

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