

Abstract Submitted
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SME Gravitational Tests QUENTIN G. BAILEY, Embry-Riddle Aeronautical University, ALAN KOSTELECKY, Indiana University — The search for miniscule Lorentz-symmetry violations offers a promising experimental path to Planck-scale physics. A systematic effective field theory called the Standard-Model Extension (SME) describes general Lorentz violation and has been adopted for modern Lorentz-symmetry tests. In a recent work, the gravitational sector of the SME has been analyzed and sensitive experiments have been identified. In this talk, I will summarize theoretical and experimental aspects of this work. Recent lunar laser ranging and atom interferometer experiments, which place the first stringent constraints on gravity coefficients for Lorentz violation, will be discussed.

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