

Abstract Submitted
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Phenomenology of Lorentz-violating gravitational couplings

QUENTIN BAILEY, Embry-Riddle Aeronautical University — Recent precision searches for miniscule violations of Lorentz invariance have been motivated in part by the possibility of uncovering signals from an underlying unified theory of physics. The effective field theory framework called the Standard-Model Extension (SME), which describes general Lorentz violation for known matter and fields, has been used in the analysis of many of these tests. In particular, the phenomenology of Lorentz-violating gravitational couplings in the SME has recently been explored in the literature and some measurements have already been published. I will discuss the status of this work, including recent solar system and Earth-based laboratory constraints on certain coefficients for Lorentz violation, as well as possibilities for future tests.

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