

Abstract Submitted
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Lorentz violation in positronium decay from the Standard Model Extension GREGORY ADKINS, Franklin & Marshall College, RICHARD FELL, Brandeis University — Positronium is an attractive system for the study of fundamental symmetries and interactions because of its relative simplicity and its accessibility to precision measurements. As such, it can be (and has been) used as a laboratory in the search for beyond-the-standard-model physics. One approach to parametrizing such new physics is through the standard model extension (SME). The SME effective Lagrangian involves a number of new interactions not present in the standard model, many of which violate fundamental symmetries such as Lorentz invariance and CPT. We have calculated the leading-order effects of the SME on the decay rates of para- and orthopositronium and on correlations involving the initial orthopositronium polarization, finding effects that are measurable in principle.

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