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Signals for Lorentz violation in atomic spectroscopy ARNALDO J. VARGAS, V. ALAN KOSTELECKÝ, Indiana University — A breakdown of Lorentz and CPT symmetry has been proposed as a possible signal in several candidate theories of quantum gravity. This talk discusses the prospects for detecting Lorentz and CPT violation via atomic spectroscopy, using the effective field theory known as the Standard-Model Extension and including operators of both renormalizable and nonrenormalizable mass dimensions. The discussion targets commonly measured atomic transitions in experiments with conventional matter and with more exotic atoms such as antihydrogen, muonium, and muonic hydrogen. Potential signals are identified and constraints from existing data are obtained.

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