

Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Prospects for testing CPT and Lorentz symmetry with electronic transitions ARNALDO VARGAS, V. ALAN KOSTELECKÝ, Indiana Univ - Bloomington — Empirical evidence for minuscule deviations from the principle of relativity could help physicists develop a theory that accurately describes gravity at the quantum scale. Measurements of electronic transitions are among the most precise and accurate measurements in all science, and they offer a sensible approach to the search for Lorentz and CPT violation. Using the Standard-Model Extension, phenomenological models for Lorentz violation in commonly measured atomic transitions are obtained. This includes models for experiments with ordinary matter, muonic atoms, and antimatter. Clock-comparison experiments are also considered, including experiments with microwave and optical atomic clocks. In all cases, potential signals for Lorentz and CPT violation are singled out and estimates of the sensitivity of the experiments are discussed.

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Date submitted: 28 Jan 2017

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