

## **CPT violation, Lorentz violation, and exotic atoms**

*Monday, 11 September 2017 09:00 (30 minutes)*

Theories beyond the standard model of particle physics and general relativity can accommodate small deviations from Lorentz and CPT symmetry. The Standard Model-Extension is an effective field theory that was developed to facilitate the systematic search for Lorentz violation. Tests of Lorentz and CPT symmetry with exotic atoms such as antihydrogen, muonium, muonic hydrogen, and positronium offer some advantages compared to experiments with ordinary matter. Testable models for Lorentz and CPT violation have been obtained from the SME for atomic spectroscopy experiments and antimatter gravity tests. Experimental studies using these test models will advance our understanding and improve constraints on Lorentz and CPT violation with second-generation particles and antimatter.

**Primary author:** VARGAS, Arnaldo (Indiana University)

**Presenter:** VARGAS, Arnaldo (Indiana University)

**Track Classification:** Antihydrogen: CPT and gravity