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### **Lorentz and CPT Violation: Status and Prospects**

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Lorentz and CPT symmetry is an intrinsic component of our best existing theories of nature, including QED, the Standard Model, and General Relativity. However, in an underlying theory that combines quantum physics with gravity, this invariance could be violated. The resulting physics emerging at presently accessible energies is described by the general effective field theory for Lorentz and CPT violation called the Standard-Model Extension (SME). Precision measurements using sensitive techniques from atomic and optical physics have the potential to reveal the experimental signals predicted by the SME.