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The Muon g-2 Experiment and CPT/Lorentz-Violation[1]

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The Muon $g-2$ Experiment now running at Fermilab aims to resolve the current 3.7σ experiment-theory discrepancy in the anomalous magnetic moment of the muon, $a_\mu = (g-2)/2$. Among the possible sources of new physics that could account for a non-zero value for a_μ are CPT or Lorentz Invariance violations. Previous muon $g-2$ experiments have set the majority of the most stringent limits on Standard-Model Extension CPT and Lorentz violation in the muon sector. These limits are consistent with calculations of the level of Standard-Model Extension effects required to account for the current a_μ discrepancy. The status and prospects of the Fermilab Muon $g-2$ Experiment measurement of a_μ and searches for CPT/Lorentz violation will be presented.

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