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Muon $g-2$ in 10 minutes

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The primary goal of the Muon $g - 2$ experiment at Fermilab (E989) is to measure the anomalous magnetic moment of the muon, a_μ , to a precision of 140 ppb. This anomaly receives contributions from all sectors of the Standard Model (SM), and beyond, via loop diagrams at the muon-photon vertex. As such, any divergence of a_μ from the SM is indirect evidence of new physics. In April this year the E989 collaboration unblinded and published an exciting first result: a measurement of a_μ using data comprising a small subset of the target total data set. This combined with the previous best measurement of a_μ from Brookhaven (BNL) results in a 4.2σ tension with the SM at a precision of 350 ppb. This talk presents an overview of Muon $g - 2$: its experimental principles, status, and prospects. In addition, the experiment's secondary physics goal, a search for a muon electric dipole moment, will be discussed.

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