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The Muon Anomalous Magnetic Moment: Final Results from the Muon g-2 Experiment at Fermilab

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The Muon g-2 Experiment at Fermi National Accelerator Laboratory set out to measure the muon anomalous magnetic moment, a_μ , with a target precision of 140 parts-per-billion (ppb), representing a four-fold improvement over the predecessor measurement at Brookhaven National Laboratory in the 2000s. The Muon g-2 collaboration recently published the analysis of the final three of a total of six years of data taking, achieving a combined precision of 127 ppb, surpassing its design goal. This new result will remain a benchmark test for any future extension of the Standard Model for years to come. This talk will provide a brief history and overview of the experiment, details of the latest analysis, and the final result on a_μ .

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