

Latest Results from the Muon g-2 Experiment at Fermilab

The muon magnetic anomaly, $a_\mu = (g - 2)/2$, can be both measured and computed to a very high precision, making it a powerful probe to test the Standard Model of particle physics and search for new physics. The Fermilab Muon g-2 Collaboration has recently released the third and final measurement of the magnetic anomaly of the positive muon. The measurement shows excellent agreement with the previous measurements and with the previous E821 experiment at Brookhaven (USA). The final record-breaking precision of 127 parts per billion (ppb) surpassed the initial design goal of the experiment. This achievement was possible thanks to both high statistics and to the extensive and scrupulous analysis of the magnetic fields, the beam dynamics, and the particle detection, obtaining a final systematic uncertainty under 80 ppb. This talk will cover the highlights of the latest measurement, discuss its comparison with the latest Standard Model predictions, and provide an outlook on the upcoming analyses.

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