

Current Status of Muon $g-2$ Experiment at Fermilab

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The Fermilab Muon $g-2$ Experiment aims to make precise measurements of the anomalous magnetic moment (a_μ) of the muon. The first measurement of the experiment is 3.3σ larger than the Standard Model (SM) prediction. The measurement is in good agreement with the previous result with improved precision. The uncertainty of the measurement is 0.46 ppm which gives the most precise measurement on a_μ up to date. The new world average value is 4.2σ larger than the SM prediction. This result further strengthens the evidence for new physics beyond the Standard Model (BSM).

The analysis of Run 2+3 is underway. With improvement and optimization after Run1, the systematic uncertainties will be further reduced. In early July, the Run 5 data taking was finished. Up to date, about 19xBNL data in total were collected.

Category

talk

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