

Beam dynamics corrections of the Muon g-2 Experiment at Fermilab

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The Muon g-2 experiment at Fermilab is analyzing the final data set collected from 2021 to 2023. Our most recent measurement of the positive muon magnetic anomaly, published in 2023, reached a precision of 200 parts per billion (ppb) with a total systematic uncertainty of 70 ppb. To calculate the uncertainty of our final experimental value, we need to assess the systematic effects that arise from the dynamics of the muon beam as part of the analysis. This talk discusses the corrections to the anomalous precession frequency due to the impact of beam dynamics.

Working Group

WG 4: Muon Physics

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