

Recent measurement and experimental prospects of the Muon $g-2$ experiment at Fermilab

Tuesday, 31 October 2023 11:00 (30 minutes)

The Muon $g-2$ experiment at Fermilab aims to measure the anomalous magnetic moment of the muon, $a_\mu = (g - 2)/2$, with a final accuracy of 140 parts per billion, representing one of the most precise tests of the Standard Model. The experiment's first result from the 2018 dataset, Run 1, was published in 2021 and confirmed the previous result obtained at Brookhaven National Laboratory with a similar sensitivity. We present here the result based on the 2019 and 2020 datasets, Runs 2 and 3, which contain a factor of four more data than in Run 1, thus entering a new sensitivity regime to $g-2$.

We discuss the experimental and the analysis improvements with respect to Run 1 result and the experiment's future prospects for the next years.

Primary author: Dr BOTTALICO, Elia (University of Liverpool)

Presenter: Dr BOTTALICO, Elia (University of Liverpool)

Session Classification: Conference talks