## **New Perspectives 2021**



Contribution ID: 62 Type: not specified

## Muon g-2 in 10 minutes

Thursday, 19 August 2021 10:45 (15 minutes)

The primary goal of the Muon g-2 experiment at Fermilab (E989) is to measure the anomalous magnetic moment of the muon,  $a_{\mu}$ , to a precision of 140 ppb. This anomaly receives contributions from all sectors of the Standard Model (SM), and beyond, via loop diagrams at the muon-photon vertex. As such, any divergence of  $a_{\mu}$  from the SM is indirect evidence of new physics. In April this year the E989 collaboration unblinded and published an exciting first result: a measurement of  $a_{\mu}$  using data comprising a small subset of the target total data set. This combined with the previous best measurement of  $a_{\mu}$  from Brookhaven (BNL) results in a  $4.2\sigma$  tension with the SM at a precision of 350 ppb. This talk presents an overview of Muon g-2: it's experimental principles, status, and prospects. In addition, the experiment's secondary physics goal, a search for a muon electric dipole moment, will be discussed.

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Session Classification: Thursday