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## The Muon g-2 Experiment at Fermilab

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The muon anomalous magnetic moment,  $a_\mu = \frac{g-2}{2}$ , is a low energy observable that can be both measured and computed with high precision. Therefore it provides an important test of the Standard Model (SM) and it is a sensitive probe for new physics. In particular, any deviation from the Standard Model theoretical value can be due to Beyond Standard Model Physics contribution, such as SUSY, Dark Matter, or new unknown contributions.

The  $a_\mu$  value has been measured to a precision of 0.54 ppm by the E821 experiment at the Brookhaven National Laboratory (BNL). This result shows a  $\sim 3.6\sigma$  difference compared to the SM prediction. In an effort to clarify this discrepancy between experimental measurement and theoretical calculation, the Muon g-2 (E989) experiment at Fermilab aims to reduce the experimental error on  $a_\mu$  by a factor of four.

E989 collected a dataset with the same statistical power of the BNL experiment during the Run 1 data taking (2018). The data are under analysis and the first result will most likely be published next summer. In this talk I will discuss the experimental setup and report on the status of the Run 1 analysis.

### Summary

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