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## The g-2 experiment at FNAL

*Wednesday 31 August 2022 15:30 (30 minutes)*

The Fermilab muon g-2 experiment recently released its first measurement of the positive muon magnetic moment anomaly,  $a_\mu = (g_\mu - 2)/2$  to an accuracy of 0.46 ppm. The anomaly  $a_\mu$  is of interest since it can be predicted with impressive precision and its value is sensitive, via quantum corrections, to the interactions of the muon with the other particles of the Standard Model. Comparison of measurement results and theoretical predictions tests the completeness of the Standard Model, and a significant discrepancy would indicate the need for new physics. Details of the Fermilab experiment and its first result will be presented, along with a comparison with the theory and future prospects.

### Scientific topic

Symmetries

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**Session Classification:** Symmetries