

## The Muon $g-2$ experiment at Fermilab

*Thursday, 14 September 2017 14:00 (30 minutes)*

The anomalous magnetic dipole moment of the muon can be measured and computed to very high precision, making it a powerful probe to test the standard model and search for new physics. The previous measurement by the Brookhaven E821 experiment found a  $\sim 3$  standard deviation discrepancy from the predicted value. The new  $g-2$  experiment at Fermilab is intended to improve the precision by a factor of 4, obtained by a factor twenty increase in statistics and a reduced systematic uncertainty with an upgraded apparatus. The experiment will also carry out an improved measurement of the muon electric dipole moment. Construction and commissioning at Fermilab are almost completed and data taking is expected in late 2017. An overview of the whole system and results of test runs will be reported.

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**Track Classification:** Future facilities and instrumentation