

## The Fermilab muon $g-2$ experiment

Antonio Anastasi

Dipartimento di Fisica e di Scienze della Terra, Università di Messina, Messina, Italy

The anomalous magnetic dipole moment of the muon can be both measured and computed to very high precision, making it a powerful probe to test the standard model and search for new physics such as SUSY. The previous measurement by the Brookhaven E821 experiment found a 3.6 standard deviation discrepancy from the predicted value. The new  $g-2$  experiment at Fermilab will improve the precision by a factor of four through a factor of 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 at Fermilab is well underway.