



## Measuring the muon magnetic anomaly with the "Muon g-2" experiment at Fermilab

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### Abstract:

The recently published result by the Fermilab Muon g-2 experiment on the muon anomaly  $a_\mu$ , based on the first dataset collected in Spring 2018, confirms the discrepancy of the observed value from the currently Standard Model prediction, reaching 4.2 standard deviations. The data already collected, and currently under analysis, will half the current uncertainty, while the full dataset, including the run programmed to be concluded in June 2022, will reduce the error by a factor of 4, thus potentially allow for a discovery of new physics beyond the Standard Model. After a historical introduction, the experiment will be reviewed, discussing the critical issues of the first set of data and how they have been addressed in view of the high statistics Runs. Recent theoretical developments will be also presented

