

New precise measurement of the Muon magnetic anomaly at Fermilab.

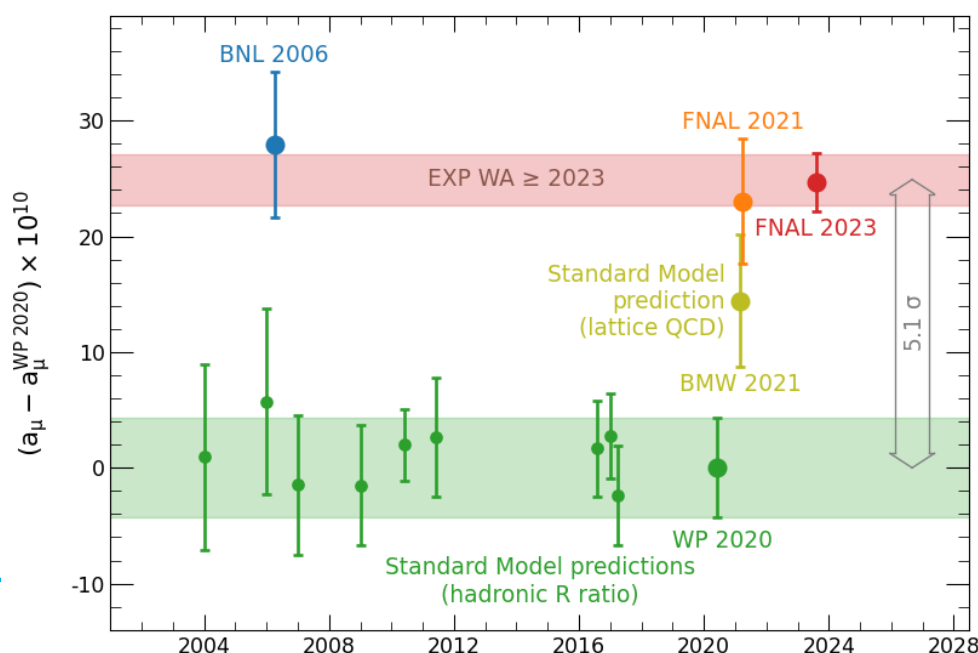
Tuesday, 29 August, 2023

Auditorium & Webcast 16:00 h

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The Fermilab E989 Muon $g-2$ collaboration has measured the muon magnetic anomaly with a precision of 0.20 ppm, which corresponds to 0.25 ppb on the whole muon magnetic moment g -factor. The elementary particle magnetic moment g -factor is a dimensionless number that can be considered the most simple and fundamental prediction of the Standard Model theory of particle physics, once the model's parameters have been adjusted to fit the measured particle masses and interaction strengths.

The experimental result differs by 5.1 standard deviations from the main theory prediction dated at the end of 2020, 0.37 ppm precise. On-going progress on the theory side has not yet been summarized into an official consensual update of the prediction. The observed discrepancy between direct measurement and theory prediction may indicate the presence of new particles and interactions, or issues to be understood in experimental measurements, including the ones used for the theory prediction, or theory calculations or procedures. In this seminar the recent Fermilab measurement released in 2023 will be described.



Please note:

This is a HYBRID colloquium!

Meeting ID: 996 1652 8733

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