Contribution ID: **91** Type: **Plenary Presentation**

Hadronic vacuum polarization contribution to the muon g–2 from lattice QCD

Friday 8 December 2023 11:10 (25 minutes)

The experimental uncertainty on the anomalous magnetic moment of the muon has been significantly reduced with the recent results of the Fermilab g-2 experiment, and a further reduction is expected in the near future. The precision of the Standard Model prediction needs to improve correspondingly to increase the sensitivity of tests for physics beyond the Standard Model. The largest uncertainty is due to the strong interaction, in particular the hadronic vacuum polarization (HVP) contribution.
Lattice QCD calculations have the potential to provide precise predictions of the HVP contribution with systematically improvable uncertainties. We will review the current state of lattice QCD calculations, focusing on the dominant sources of uncertainty that need to be controlled to provide results with sub-percent precision. We will also address recently emerging tensions with data-driven estimates.

Name of collaboration or list of co-authors

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Session Classification: Friday before lunch