

Muon g-2: hadronic contributions

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The Fermilab Muon g-2 Experiment recently reported their first result for the anomalous magnetic moment of the muon that differs from the Standard Model (SM) prediction by 4.2\$ standard deviations. The error on the SM prediction, which is comparable in size to the experimental uncertainty, is entirely dominated by the determination of the hadronic contributions, which arise from the low-energy, non-perturbative nature of hadronic interactions. In this talk I will review the status of the calculations of both the hadronic vacuum polarisation (HVP) and hadronic light-by-light contributions, detailing the progress that has been achieved through the efforts of the Muon g-2 Theory Initiative and its groups within. I will place particular focus on the status of the HVP contributions, which dominate the hadronic uncertainty, and report on the comparison between the results from data-driven dispersive approaches and from lattice QCD.

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