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Muon g-2: data-driven HVP from KNT

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Last year, the Muon g-2 experiment at Fermilab reported a value for the muon magnetic moment that disagrees with the theoretical SM prediction by 4.2 standard deviations. The potential to confirm the presence of a BSM muon interaction beyond 5 standard deviations rests heavily on improving the SM predictions for the muon magnetic moment, which is entirely dependent on improving evaluations of the hadronic vacuum polarisation (HVP). Currently, the most precise approach to evaluate the HVP is to use experimentally measured data of hadron production cross sections as input to dispersion integrals to calculate their contributions. This endeavour requires combining all available measurements and corresponding uncertainties for all individual hadronic final states in a statistically robust procedure, and then summing all contributions to arrive at a full evaluation of the total hadronic cross section. I will present the KNT analysis of this endeavour, reviewing the results of our most recent update, highlighting upcoming changes and areas for improvement.

Category

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