

New τ -based evaluation of the hadronic contribution to the vacuum polarization piece of the muon anomalous magnetic moment

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We review the isospin-breaking and electromagnetic corrections to the $\tau^- \rightarrow \pi^- \pi^0 \nu_\tau$ decays, which are used as an input to the two-pion contributions to the hadronic vacuum polarization (at LO) of the anomalous magnetic moment (a_μ). We extend previous analyses by Cirigliano et al. working with ChPT with resonances. As an outcome, we improve the agreement between this determination and the other based on e^+e^- data. The new results are in better agreement with an old estimation that uses Vector Dominance Model (VMD), and the discrepancy between the SM prediction and the combined results from BNL and FNAL is reduced to 2.1σ at $\mathcal{O}(p^4)$ and 2.3σ at $\mathcal{O}(p^6)$.

What is your topic?

Anomalous Magnetic Moment of the muon

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