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Short and intermediate distance HVP contributions to muon g-2: SM (lattice) prediction versus e+e- annihilation data

Friday, 8 July 2022 09:30 (15 minutes)

We present new lattice results of the ETM Collaboration, obtained from extensive simulations of lattice QCD with dynamical up, down, strange and charm quarks at physical mass values, different volumes and lattice spacings, concerning the SM prediction for the so-called intermediate window (W) and short-distance (SD) contributions to the leading order hadronic vacuum polarization (LOHVP) term of the muon anomalous magnetic moment, a_μ. Results for $a^W_{\mu,LOHVP}$ and $a^{SD}_{\mu,LOHVP}$, besides representing a step forward to a complete lattice computation of $a_{\mu,LOHVP}$ and a useful benchmark among lattice groups, are compared here to their dispersive counterparts based on experimental data for e^+e^- into hadrons. The comparison confirms the tension in $a^W_{\mu,LOHVP}$, already noted in 2020 by the BMW Collaboration, while showing no tension in $a^{SD}_{\mu,LOHVP}$.

In-person participation

Yes

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