

HVP contribution of the light quarks to the muon ($g - 2$) including QED corrections with Twisted-Mass fermions

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We present a preliminary lattice calculation of the Hadronic Vacuum Polarization (HVP) contribution of the light quarks to the anomalous magnetic moment of the muon including leading-order strong and electromagnetic isospin-breaking corrections. Our lattice results are obtained in an electro-quenched setup using the gauge configurations generated by the European Twisted Mass Collaboration (ETMC) with $N_f = 2 + 1 + 1$ dynamical quarks at three lattice spacings varying from 0.089 to 0.062 fm with pion masses in the range $M_\pi \simeq 220 - 490$ MeV. Several lattice volumes are considered in order to investigate the impact of finite-volume effects. Systematic uncertainties due to the extrapolations to the physical pion mass and to the infinite-volume and continuum limit are estimated.

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