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Window contributions to the muon hadronic vacuum polarization with twisted-mass fermions

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We present a lattice calculation of the Euclidean position-space windows contributing to the leading-order hadronic vacuum polarization term of the muon anomalous magnetic moment a_μ.
Short-, intermediate- and long-distance windows are considered in order to isolate different scales sensitive to specific integration ranges of experimental time-like data used in the R-ratio.
By adopting the same smooth window function introduced by the RBC and UKQCD Collaborations with width parameter $\Delta = 0.15$ fm, for the isospin-symmetric, light, quark-connected component we get $a_\mu^{\rm SD}(ud, \text{iso}) = 48.21\,(80) \times 10^{-10}$, $a_\mu^{\rm W}(ud, \text{iso}) = 202.2\,(2.6) \times 10^{-10}$ and $a_\mu^{\rm LD}(ud, \text{iso}) = 382.5\,(11.7) \times 10^{-10}$ in the short- (SD), intermediate- (W) and long-distance (LD) time regions, respectively, with $t_0 = 0.4$ fm and $t_1 = 1.0$ fm.
Our results are obtained using the gauge configurations generated by the Extended Twisted Mass Collaboration with $N_f = 2 + 1 + 1$ dynamical quarks, at three values of the lattice spacing varying from 0.089 to 0.062 fm, at several lattice volumes and with pion masses in the range $M_\pi \simeq 220 - 490$ MeV.

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