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Lattice calculation of the HVP contribution to the anomalous magnetic moment of muon

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We report our (HPQCD) progress with the lattice QCD calculations of both the connected and disconnected hadronic Vacuum Polarisation (HVP) contributions to the anomalous magnetic moment of the muon ($g-2$). Our method uses Padé approximants to reconstruct the Adler function from its derivatives at $q^2=0$. These are obtained simply and accurately from time-moments of the vector current-current correlator at zero spatial momentum. We give a full flavor estimate of the total HVP contribution calculated on MILC Collaboration's $n_f = 2+1+1$ HISQ ensembles at multiple values of the lattice spacing, multiple volumes and multiple light sea quark masses (including physical pion mass configurations) and corrected for finite volume effects.

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