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The strange and charm quark contributions to the anomalous magnetic moment (g -2) of the muon from current-current correlators

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We describe a new technique (presented in arXiv:1403.1778) to determine the contribution to the anomalous magnetic moment (g-2) of the muon coming from the hadronic vacuum polarization using lattice QCD. 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 test the method using strange quark correlators 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).

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