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Progress on the Hadronic vacuum polarization contribution to muon $g-2$ from lattice QCD

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We give an update of our calculation of the light-quark, connected hadronic vacuum polarization contribution to the muon anomalous magnetic moment. The update includes preliminary results on a $2 + 1 + 1$ highly-improved staggered quark (HISQ) ensemble from the MILC collaboration with physical pion mass, 0.042 fm lattice spacing, and size $144^3 \times 288$ sites. We discuss code and algorithm improvements for these calculations to compute the vector-vector correlation function more efficiently.

Primary authors: AUBIN, Christopher (Fordham University); JIN, Luchang (University of Connecticut); GOLTERMAN, Maarten (San Francisco State University); PERIS, Santiago (univ. autonoma de barcelona); BLUM, Thomas (UConn); MONINGI, Vaishakhi (University of Connecticut)

Presenter: MONINGI, Vaishakhi (University of Connecticut)

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