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Type: **Talk**

Toward sub-percent precision in muon $g-2$

Monday 3 November 2025 17:00 (20 minutes)

We present a progress update on the Fermilab Lattice, HPQCD, and MILC collaboration's ongoing effort to compute the hadronic vacuum polarization (HVP) contribution to the muon $g-2$. In particular, we describe the current status for the dominant isospin-symmetric leading order HVP quantities, namely the connected light-, strange-, and charm-quark contributions, including new data on our finest lattice spacing to date, 0.04 fm, where the one-link vector current has now been added for strange and charm, as well as for the light quarks. Preliminary results for the long-distance disconnected and $I=0$ contributions are also discussed. Finally, progress toward a complete (NLO) determination of the HVP contribution is outlined. All calculations are performed on 2+1+1 flavor HISQ ensembles with a physical pion mass. A companion talk will discuss the status of corresponding isospin-breaking corrections.

Parallel Session (for talks only)

Quark and lepton flavor physics

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