The 38th International Symposium on Lattice Field Theory

LATTICE 21

JULY 26-30 2021, ZOOM/GATHER@MIT

Contribution ID: **471** Type: **Oral presentation**

Finite size effects in the leading hadronic vacuum polarisation contribution to $(g-2)_\mu$

Monday 26 July 2021 13:00 (15 minutes)

The leading hadronic vacuum polarisation contribution to $(g-2)_\mu$ was recently determined by the Budapest-Marseille-Wuppertal collaboration to sub-percent precision, providing for the first time an ab-initio calculation of this quantity with errors comparable to phenomenological determinations.

To reach this unprecedented level of precision, a number of critical issues needed to be addressed. One such issue was the significant finite-size effects arising from the two-pion physics that dominates the hadronic vacuum polarisation. In this talk we describe how these finite-size effects were addressed through a combination of dedicated lattice simulations, chiral perturbation theory, and phenomenological models.

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Session Classification: QCD in searches for physics beyond the Standard Model

Track Classification: Particle physics beyond the Standard Model