



Contribution ID: 231

Type: **Parallel Talk**

Pseudoscalar-pole contributions to HLbL at the physical point

Tuesday, 1 August 2023 17:00 (20 minutes)

We present our computation of the pion and eta-meson transition form factors from twisted mass lattice QCD at physical quark masses. In particular, we report on the improvements we recently made in the calculation of the pion transition form factor, which finalizes the calculation with data presently available to us. We use the form factors to determine the pseudoscalar-pole contributions to the hadronic light-by-light scattering in the muon $g-2$, as well as the two-photon decay widths and pseudoscalar transition form factor slopes. Our continuum estimate of the pion-pole $g-2$ contribution is comparable with other lattice and data-driven determinations while achieving a sub-10% precision. For the eta-pole contribution estimate at a single lattice spacing of 0.08 fm we achieve a sub-40% precision and are also compatible with other lattice and data-driven results. We further indicate the planned steps needed to achieve a continuum result for the eta-pole calculation.

Topical area

Quark and Lepton Flavor Physics

Primary authors: KANWAR, Gurtej (MIT); PETSCHLIES, Marcus (University Bonn); BURRI, Sebastian Andreas (University of Bern, Institute for Theoretical Physics); WENGER, Urs (University of Bern)

Presenter: BURRI, Sebastian Andreas (University of Bern, Institute for Theoretical Physics)

Session Classification: Quark and Lepton Flavor Physics