



Contribution ID: 9

Type: **Parallel Talk**

QED Corrections to Meson and Bare Quark Masses

Monday, 31 July 2023 16:20 (20 minutes)

We calculate the leading-order QED corrections to meson masses and bare quark masses. As lattice QCD calculations become more precise, these QED corrections are becoming more important. However, one of the challenges in adding QED effects to QCD calculations is avoiding power-law suppressed finite volume effects. These effects can enter calculations of many observables because QED has massless degrees of freedom. By using a recently introduced infinite-volume reconstruction method for QED, we are able to avoid this problem and perform calculations with exponentially-suppressed finite-volume effects.

Topical area

Hadronic and Nuclear Spectrum and Interactions

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Session Classification: Hadronic and Nuclear Spectrum and Interactions