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Precise Determination of CKM Matrix Elements with Lattice QCD+QED

Wednesday, December 16, 2020 2:00 PM (30 minutes)

The Cabibbo-Kobayashi-Maskawa (CKM) matrix is a 3×3 unitary matrix in the Standard Model of particle physics. In the age of precision physics, one of the ongoing efforts to extend the Standard Model is to test the unitarity of the CKM matrix. This requires a precise determination of its matrix elements from first principles. Since quarks hadronise into bound states at $E \approx \Lambda_{QCD} \sim 300$MeV, we will require a non-perturbative approach to obtain theoretical predictions of hadronic observables. This is where Lattice QCD(+QED) comes in. In this talk, I will present the progress made by the RBC-UKQCD collaboration in determining $\frac{V_{us}}{V_{ud}}$ and discuss our future plans on extracting the individual matrix elements.

Would you be interested in receiving feedback on your talk?

Yes

Will you be pre-recording your talk?

No

Length of talk

15-25 minutes

Are you happy for your talk to be recorded?

Yes

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