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A strategy for B-physics observables in the continuum limit

Wednesday, 2 August 2023 10:00 (20 minutes)

In a not well known paper [JHEP01(2008)076] it was shown how to perform interpolations between relativistic and static computations in order to obtain results for heavy-light observables for masses from (say) m_{charm} to m_{bottom}. All quantities are first continuum extrapolated and then interpolated in $1/m = 1/m_{\text{heavy}}$. Large volume computations are combined with finite volume ones where a relativistic bottom quark is accessible with small am. We discuss how this strategy is extended to semileptonic form factors and other quantities of phenomenological interest. The essential point is to form quantities which cancel all $alpha_s(m)^{(}n + \gamma)$ perturbative corrections to large mass scaling. We also point out how such an approach can help to control systematics in semileptonic decays with just large volume data. First numerical results with $N_f = 2 + 1$ and lattice spacings down to 0.039 fm are presented in a companion talk.

Topical area

Standard Model Parameters

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