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Optimized Distillation Profiles for Heavy-Light Spectroscopy

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It has been demonstrated that distillation profiles can be employed to build optimized quarkonium interpolators for spectroscopy calculations in lattice QCD. We test their usefulness for heavy-light systems on (3+1)-flavor ensembles with mass-degenerate light and a charm quark in the sea in preparation for a future DDb̄-scattering analysis.

The additional cost of light inversions naturally leads to the question if knowledge of optimal profiles can be used to avoid superfluous computations. We show such optimal profiles for different lattice sizes and pion masses and discuss general trends.

Furthermore, we discuss the handling of momenta in this framework.

Topical area

Hadronic and Nuclear Spectrum and Interactions

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