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Investigation of a novel fully relativistic heavy-quark action in D meson systems

Tuesday 4 November 2025 18:00 (1h 30m)

We present initial results for the application of a novel relativistic heavy-quark action in the charm sector on 2+1-flavor lattice ensambles produced by the CLS consortium. The five parameter action was tuned non-perturbatively using a neural network and experimental continuum charmonium ground state masses. We investigate effective masses of D meson correlators produced on CLS ensambles X451 and N451 with pion mass of approximately 280 MeV, as well as the expected relativistic dispersion relation. The meson correlators were produced using the stochastic distillation scheme. Additionally we present expected energy levels of the $D\pi$-channel in meson-meson scattering up to the η threshold and describe our setup for an ongoing determination of scattering amplitudes in the $D\pi$ scattering system.

Parallel Session (for talks only)

Hadronic and nuclear spectrum and interactions

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Session Classification: Poster session