

Investigation of the $D\pi$ spectrum from a neural-network tuned heavy-quark action

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We present the spectrum of the $D\pi$ meson-meson scattering system on the 2+1-flavor lattice ensembles X451 and N451 produced by the CLS consortium with pion masses of approximately 287 MeV. The spectrum was produced for center-of-mass momenta up to $P^2 = 4$. The employed heavy-quark action was tuned non-perturbatively using a neural network and continuum charmonium ground-state masses. Meson correlation functions were produced using the stochastic distillation scheme. Investigating the $D\pi$ spectrum is an initial step for the extraction of scattering amplitudes to perform a full scattering analysis of the $D\pi$ system using Lüscher's finite volume method.

Collaboration

Primary author: THOMA, David (Technical University of Darmstadt)

Co-author: MOHLER, Daniel (Technical University of Darmstadt)

Presenter: THOMA, David (Technical University of Darmstadt)

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