## 2024 Meeting on Lattice Parton Physics from Large Momentum Effective Theory (LaMET2024)



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## Exploring the heavy meson distribution amplitudes from lattice QCD

*Tuesday 13 August 2024 10:45 (30 minutes)* 

We present a method to compute lightcone distribution amplitudes (LCDAs) of heavy meson within heavy quark effective theory (HQET). Our method utilizes quasi distribution amplitudes (quasi-DAs) with a large momentum component  $P^z$ . We point out that by sequentially integrating out  $P^z$  and  $m_H$ , one can disentangle different dynamical scales. Integrating out  $P^z$  allows to connect quasi-DAs to QCD LCDAs, and then integrating out  $m_H$  enables to relate QCD LCDAs to HQET LCDAs. To verify this proposal, we make use of lattice QCD simulation on a lattice ensemble with spacing a = 0.05187fm. The preliminary findings for HQET LCDAs qualitatively align with phenomenological models. Using a recent model for HQET LCDAs, we also fit the first inverse moment  $\lambda_B^{-1}$  and the result is consistent with the experimentally constrain from  $B \rightarrow \gamma \ell \nu_{\ell}$ . This agreement demonstrates the promise of our method in providing first-principle predictions for heavy meson LCDAs.

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