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Optimal smearing for heavy-light mesons in motion

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This work presents a study of Wuppertal smearing, comparing different mesons and kinematic configurations. We propose a parametrization of the optimal smearing radius in terms of the reduced masses of the mesons, giving, at the same time, an estimate of the efficiency of the smearing in suppressing the excited states.

The relation between Momentum Smearing and ordinary Wuppertal smearing with Twisted Boundary conditions is discussed and the two are found to be substantially equivalent.

These results will lay the ground for future calculations of the form factors for heavy-light to heavy-light semileptonic decays, where the smearing will be fundamental to extracting physical quantities from regions with better signal-to-noise ratios.

Topical area

Hadronic and Nuclear Spectrum and Interactions

Primary authors: SANFILIPPO, Francesco (INFN, RomaTre University); DI PALMA, Roberto (Infn, sezione di Roma Tre); GAGLIARDI, Giuseppe (Infn, sezione di Roma Tre)

Presenter: DI PALMA, Roberto (Infn, sezione di Roma Tre)

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