Contribution ID: **173** Type: **Contributed**

On the prediction of spectral densities from Lattice QCD: numerical aspects

Tuesday, 6 June 2023 17:20 (20 minutes)

Hadronic spectral densities play a pivotal role in particle physics, a primer example being the R-ratio defined from electron-positron scattering into hadrons. To predict them from first principles using Lattice QCD, we face a numerically ill-posed inverse problem, due to the Euclidean signature adopted in practical simulations. Here we present a recent numerical analysis of the vector isovector spectral density extracted using the multi-level algorithm (recently extended also to the case of dynamical fermions) and discuss its implications.

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Session Classification: Hadron decays, production and interaction

Track Classification: Hadron decays, production and interactions