

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

Tuesday, June 6, 2023 4:55 PM (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 review the status of recent numerical approaches to the inverse Laplace transform and present a new analysis of the typical systematic errors associated to a Lattice prediction (e.g. finite-volume effects).

Primary authors: Dr SACCARDI, Matteo (Istituto Nazionale di Fisica Nucleare); BRUNO, Mattia (Universita' di Milano-Bicocca)

Presenter: BRUNO, Mattia (Universita' di Milano-Bicocca)

Session Classification: Hadron decays, production and interaction

Track Classification: Hadron decays, production and interactions