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Nevanlinna-Pick interpolation from inexact data

Wednesday 5 November 2025 10:50 (20 minutes)

First-principles prediction of inclusive heavy-particle decay is key to interpreting experimental data and testing the Standard Model. However, lattice QCD data requires ill-posed analytic continuation before such predictions can be made. Bergamaschi, et al. proposed using Nevanlinna-Pick interpolation to address this inverse problem which provides rigorous bounds on the continued results. We propose a precise method to incorporate the uncertainty inherent in lattice data in this interpolation. The combined lattice and interpolation errors for the simplified example studied are statistically well-controlled and suggest that ab initio lattice methods may be applied to these inclusive processes.

Parallel Session (for talks only)

Hadronic and nuclear spectrum and interactions

Authors: FIELDS, Sarah (Columbia University); CHRIST, Norman (Columbia University)

Presenter: FIELDS, Sarah (Columbia University)

Session Classification: Quark and lepton flavor physics