



Contribution ID: 262

Type: **Parallel Talk**

Testing formalism for $\gamma^* \rightarrow 3\pi$ and $K \rightarrow 3\pi$

Friday, 4 August 2023 09:40 (20 minutes)

Recently, formalism has been derived for obtaining the physical amplitudes for $\gamma^* \rightarrow 3\pi$, $K \rightarrow 3\pi$, and other electroweak three-body decays, from finite-volume matrix elements, which can be obtained from lattice QCD calculations of three-point correlation functions. The relation between the finite-volume quantities and the desired infinite-volume amplitudes requires solving integral equations of singular functions. In this work, we provide some non-trivial tests on the aforementioned formalism. In particular, we consider a limit where the three-body final state supports a bound state. For kinematics below the three-body threshold, we demonstrate that the finite-volume matrix elements are accurately described by the well-known formalism for two-body systems.

Topical area

Hadronic and Nuclear Spectrum and Interactions

Primary author: BRICENO, Raul (Berkeley)**Co-authors:** JACKURA, Andrew (University of California, Berkeley); PEFKOU, Dimitra (MIT); ROMERO-LOPEZ, Fernando (MIT)**Presenter:** BRICENO, Raul (Berkeley)**Session Classification:** Hadronic and Nuclear Spectrum and Interactions