

Towards the P-wave nucleon-pion scattering amplitude in the Δ (1232) channel: Phase shift analysis

Friday, July 27, 2018 4:50 PM (20 minutes)

The study of strong scattering in Lattice QCD is enabled by the use of the Luescher method, which defines a mapping between the two body spectrum in the finite volume and the infinite volume scattering amplitude. This talk focuses on the study of πN scattering in P -wave and $I = \frac{3}{2}$, where the Δ resonance resides. We use $N_f = 2 + 1$ flavors of tree-level improved Wilson-clover quarks corresponding to a pion mass of ~ 250 MeV with lattice size 3.7 fm, where Δ is unstable. We aim to discuss the mapping of energy levels to scattering phase shifts.

Primary authors: Mr SILVI, Giorgio (Forschungszentrum Jülich - University of Wuppertal); Mr PAUL, SRIJIT (The Cyprus Institute)

Co-authors: POCHINSKY, Andrew (MIT); Prof. ALEXANDROU, Constantia (The Cyprus Institute, University of Cyprus); Prof. NEGELE, John Negele (MIT); LESKOVEC, Luka; Dr PETSCHLIES, Marcus (University Bonn); Prof. SYRITSYN, Sergey (Stony Brook University (SUNY)); MEINEL, Stefan (University of Arizona)

Presenter: Mr PAUL, SRIJIT (The Cyprus Institute)

Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions