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Three-body spectrum from lattice QCD

Three-body states are critical to the dynamics of many hadronic resonances. We show that lattice QCD calculations have reached a stage where these states can be accurately resolved. We perform a calculation over a wide range of parameters and find all states below inelastic threshold agree with predictions from a state-of-the-art phenomenological formalism. This also illustrates the reliability of the formalism used to connect lattice QCD results to infinite volume physics. Our calculation is performed using three positively charged pions, with different lattice geometries and quark masses.

