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Lattice QCD studies of the Δ baryon resonance and the $K_0^*(700)$ and $a_0(980)$ meson resonances

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Studies of the Δ baryon resonance and the $K_0^*(700)$ and $a_0(980)$ meson resonances using $N_f = 2 + 1$ lattice QCD for pion masses near 200 MeV are presented. The role of tetraquark operators in the mesonic systems is detailed. The s -wave scattering lengths for both the $I = 1/2 N\pi$ and $I = 3/2 N\pi$ channels and properties of the Δ resonance are identified from the finite-volume energy levels of the lattice simulation.

Topical area

Hadronic and Nuclear Spectrum and Interactions

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