

On the two-pole nature of the $\Lambda(1405)$ from lattice QCD

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This talk presents results of the first coupled-channel meson-baryon $\Sigma\pi - N\bar{K}$ computation from lattice QCD in the $\Lambda(1405)$ region. Correlation functions were calculated using a single ensemble with a pion mass $m\pi = 200$

MeV and kaon mass $mK = 487$ MeV, including single- and multi-hadron operators and the finite-volume energy spectra were extracted. The Lüscher method was employed to study scattering amplitudes based on these finite-

volume energies. The final results showed agreement with the two-pole picture after parametrizing the two-channel

K-matrix. These poles correspond to a virtual bound state below $\Sigma\pi$ threshold and a resonance pole below the $N\bar{K}$ threshold.

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