

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

*Thursday, 18 January 2024 11:40 (30 minutes)*

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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