

# Dispersive determination of the $\sigma$ resonance from lattice QCD

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We determine, from Lattice QCD, the elastic  $\pi\pi$  scattering amplitude in the three possible isospin channels for various quark masses. We observe that the extraction of the  $\sigma$  pole position is very challenging when the state becomes unstable. By performing a full dispersive analysis, we eliminate the systematic uncertainties associated with model extractions, constrain the low energy scattering region, and determine the  $\sigma$  pole position with accuracy.

**Primary author:** RODAS BILBAO, Arkaitz (Jefferson Lab)

**Co-authors:** DUDEK, Jozef (JLab); EDWARDS, Robert (Jefferson Lab)

**Presenter:** RODAS BILBAO, Arkaitz (Jefferson Lab)

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