

Dispersive determination of the σ 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 σ 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 σ pole position with accuracy.

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