

## **Dispersive analysis of the $\sigma$ resonance, in $\pi\pi$ scattering, from lattice QCD**

*Tuesday, 2 July 2024 10:10 (30 minutes)*

We determine from lattice QCD the  $I = 0, 1, 2$   $\pi\pi$  elastic scattering amplitudes for various quark masses. We study the quark mass dependence of the  $\sigma$  resonance and observe that, as an unstable particle, its pole position determination is very noisy. By performing a full dispersive analysis, we drastically reduce the systematic uncertainties associated with model extractions of the  $\sigma$  and low-energy  $\pi\pi$  scattering, and determine the pole position with accuracy.

**Primary author:** RODAS BILBAO, Arkaitz (Old Dominion University / Jefferson Lab)

**Presenter:** RODAS BILBAO, Arkaitz (Old Dominion University / Jefferson Lab)

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