



Contribution ID: 342

Type: **Parallel Talk**

The mixing of two-pion and vector-meson states using staggered fermions

Tuesday, 1 August 2023 14:30 (20 minutes)

In this study we employ staggered fermions to calculate the two-pion taste singlet states at rest. Leveraging the Clebsch-Gordan coefficients of the symmetry group associated with staggered fermions, we effectively compute the $\pi\pi$ contributions to the resting ρ -meson. To discern the distinct energy states involved, we adopt a generalized eigenvalue problem-solving approach. This work will provide insight into the important role played by the two-pion contribution to the anomalous magnetic moment of the muon.

In this talk, we present our group theoretic considerations and preliminary results on the contribution of two-pion states to the rho meson.

Topical area

Quark and Lepton Flavor Physics

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Session Classification: Quark and Lepton Flavor Physics