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Revealing the puzzle of the two D_0^* resonances and their connections with the flavor multiplets from analysis of Lattice QCD

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One or two D_0^* resonances with strangeness $S = 0$, isospin $I = 1/2$ dynamically generated in pseudo-scalar meson octet and heavy mesons scattering are still a puzzle. In this talk, I will present that there are two D_0^* resonances generated by ChPT up to NLO. The LECs of the interaction are constrained by the energy levels simulated by LQCD in $(S, I) = (0, 1/2)$, $(1, 0)$, $(-1, 0)$, and $(-1, 1)$ sectors. By studying the pion mass dependence of the two resonances and extrapolating to SU3 flavor symmetry point, we show that one resonance is connected to irreducible presentation **3**, and the other resonance is connected to **6**.

Collaboration

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