Contribution ID: **61** Type: **not specified**

Pole analysis for the \boldmath $D^*\bar{K}$-$D\bar{K}^*$ coupled-channel system

By solving the Lippmann-Schwinger equation, possible hadronic molecules in the $D^*\bar{K}$-$D\bar{K}^*$ coupled-channel system are investigated with the one-meson exchange potentials, where both vector and pseudoscalar mesons are considered as exchange particles. We find an S-wave virtual state with mass $M = 2487$~MeV, and a resonance with $M = 2759$ and width $\Gamma = 18$~MeV. In the $D^*\bar{K}$ invariant mass distribution, the virtual state appears as a cusp at the $D^*\bar{K}$ threshold, while the resonance potentially manifests as a dip. In particular, we take into account the $D\bar{K}\pi$ three-body dynamics due to the on-shell pion exchange and the finite decay width for $\bar{K}^*$. Additionally,
the SU(4) breaking effect in the coupling between charmed and light mesons is investigated in our work.
Our results also indicate that the accurate measurement for the decay width of the $D\bar{K}^*$ resonance can help us to evaluate this effect in the future.

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