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$D^{\ast}_{s0}(2317)$ as a DK molecular state

In the present talk, we present a molecular nature of the charmed strange $D_{s0}^*(2317)$ state. The $D_{s0}^*(2317)$ state has a mass approximately 40 MeV below the D^0K^+ threshold, and the upper limit of the width is known to be 3.8 MeV. Its favorable spin-parity assignment is believed to be $J^P = 0^+$, the parity conservation being assumed. Since $D_{s0}^*(2317)$ only decays into the isospin breaking process, the $\pi^0 - \eta$ mixing for the $D_s\pi^0$ channel is taken into account in our calculation. We solve the coupled integral equations to obtain a fully off-mass shell T-matrix in the momentum space. The u-channel exchange amplitudes in DK channels generate dynamically a DK bound state, which can be identified as the $D_{s0}^*(2317)$ meson. We also discuss the uncertainty of the results with the coupling constants varied.

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