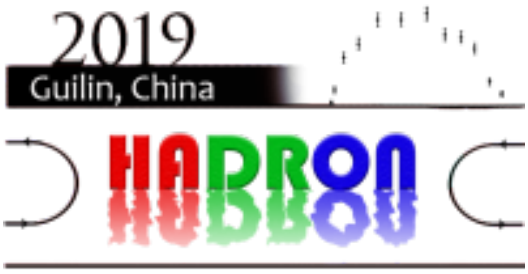

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Multiple charm and hidden charm mesons with strangeness

Wednesday, 21 August 2019 09:35 (20 minutes)

In a recent work we have studied three-body scattering, considering the DDK system, in a coupled channel approach. All input two-body scattering matrices have been obtained by solving Bethe-Salpeter equations for different channels coupling to same quantum numbers. The lowest order amplitudes for the two-body subsystems are obtained from a Lagrangian based on the heavy quark symmetry. We have investigated the contributions of three-body contact terms and find that there exists a cancellation among the different sources of contact terms. Such a test has been made with Lagrangians based on heavy quark as well as $SU(4)$ symmetries. The resulting amplitude shows that a three-body bound state should exist, with double charm and positive strangeness.

In a separate study we have investigated a hidden charm and positive strangeness system $D\bar{D}^*K$, which we treat as $KX(3872)$ and $KZ(3900)$ coupled channels, where we find a heavy K^* state formed. The results from both studies will be discussed in the talk.

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