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## Analysis of $T_{cc}$ including chiral dynamics and three-body cut

A coupled-channel approach is applied to the charged tetraquark state  $T_{cc}$  recently discovered by the LHCb Collaboration with special attention paid to the three-body dynamics due to the finite life time of the  $D^*$ . The low-energy expansion of the  $D^*D$  scattering amplitude is performed and the low-energy parameters (the scattering length and the effective range) are extracted. The compositeness parameter of the  $T_{cc}$  is found to be close to unity, which implies that the  $T_{cc}$  is a hadronic molecule, generated by the interactions in the  $D^{*+}D^0$  and  $D^{*0}D^+$  channels. With help of heavy-quark spin symmetry, an isoscalar  $D^*D^*$  molecular partner of the  $T_{cc}$  with  $J^P = 1^+$  is predicted under the assumption that the  $DD^*-D^*D^*$  coupled-channel effects can be neglected.

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