

## Towards nature of the $T_{cc}(3875)^+$ state

*giovedì 8 giugno 2023 15:00 (30 minuti)*

The recent experimental observation of the first doubly charm exotic state  $T_{cc}(3875)^+$  by the LHCb collaboration has triggered the enormous interest in the community. Indeed, this state has very peculiar properties, since it is located just a few hundreds keV below the  $D^0 D^{*+}$  threshold and its width stems almost entirely from the only available strong decay channel  $DD\pi$ , as a consequence of the finite  $D^*$  life time. This state has also been recently studied on lattice.

In this talk, we discuss our recent results for the  $T_{cc}$  from the EFT-based analysis of the experimental line shapes. Also, we argue that the left-hand-cut branch point generated by the one-pion exchange for the larger than physical pion masses sets an upper bound on the validity of the effective-range expansion, that has been used so far for extracting pertinent information on the  $T_{cc}$  from lattice. We therefore conclude that for an accurate extraction of the  $T_{cc}$  pole from lattice, the inclusion of the one-pion exchange is necessary.

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**Classifica Sessioni:** Exotic hadrons and candidates

**Classificazione della track:** Exotic hadrons and candidates