

Doubly charm and doubly bottom systems from D^*D and B^*B molecules.

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We study the exotic doubly charmed D^*D system providing a natural explanation for the T_{cc}^+ recently seen by LHCb, in terms of $D^{*+}D^0$ and $D^{*0}D^+$ with isospin $I = 0$. The width is evaluated accurately based on the decay widths of the D^* states. The $D^0D^0\pi^+$ decay mode of the bound state formed is studied in detail, showing a narrow peak below the $D^{*+}D^0$ threshold and some strength above it, as observed in the experiment, supporting strongly the molecular picture of this state, the first example of a meson with two open charmed quarks. This study can be naturally extended to the bottom sector giving interesting features for the $B^*B(I = 0)$ counterpart found there.

Primary author: FEIJOO ALIAU, Albert (Instituto de Física Corpuscular (IFIC), CSIC-UV)

Presenter: FEIJOO ALIAU, Albert (Instituto de Física Corpuscular (IFIC), CSIC-UV)