

Production of fully-heavy tetraquark states through the double parton scattering mechanism in pp and pA collisions

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The production of fully - heavy tetraquark states in proton-proton (pp) and proton - nucleus (pA) collisions at the center-of-mass energies of the Large Hadron Collider (LHC) and at the Future Circular Collider (FCC) is investigated considering that these states are produced through the double parton scattering mechanism. We estimate the cross sections for the T_{4c} , T_{4b} and T_{2b2c} states and present predictions for pp , pCa and pPb collisions considering the rapidity ranges covered by central and forward detectors. We demonstrate that the cross sections for pA collisions are enhanced in comparison to the pp predictions scaled by the atomic number. Moreover, our results indicate that a search of these exotic states is, in principle, feasible in the future runs of the LHC and FCC.

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