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Study of heavy-flavour hadron decay electrons as a function of charged-particle multiplicity in pp collisions at $\sqrt{s} = 13$ TeV with ALICE

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The study of the multiplicity dependence of heavy-flavour production in pp collisions provides insight into their production mechanism and into the interplay between hard and soft processes in particle production. In addition, at the LHC energies, multiple parton interactions may also play a significant role in the heavy-flavour production.

In this contribution, we present the measurement of the heavy-flavour hadron decay electron yield as a function of transverse momentum and charged particle multiplicity at mid-rapidity ($|\eta| < 0.8$) in pp collisions at $\sqrt{s} = 13$ TeV. Electron identification is done within $0.5 < p_T < 4.5$ GeV/c with the Time Projection Chamber (TPC) and the Time of Flight (TOF) detectors of the ALICE apparatus. The measurement of electrons from heavy-flavour hadron decay is expressed in terms of the ratio of the yield in a particular multiplicity interval to the multiplicity integrated yield (self-normalized yield). The result is given as a function of the relative charged particle pseudorapidity density within $|\eta| < 1$.

Primary author: Ms ACHARYA, Shreyasi (Department of Atomic Energy (IN))

Presenter: Ms ACHARYA, Shreyasi (Department of Atomic Energy (IN))

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