

Heavy-flavor production cross section in the semi-electronic channel at mid-rapidity in pp collisions at $\sqrt{s}=7$ TeV with ALICE

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Heavy quarks (charm and beauty) are among the most important probes that allow to test perturbative QCD descriptions of hard processes in hadronic interactions, as well as to study the hot matter produced in high energy nucleus-nucleus collisions. Precision measurements of heavy flavour production in proton-proton collisions provide the necessary reference for the interpretation of their behaviour in the deconfined state of strongly-interacting matter (Quark-Gluon Plasma). Both collision systems can be extensively studied with ALICE at LHC.

The production of heavy quarks can be measured via the detection of their semileptonic decays. We present the measurement of the inclusive electron spectrum at mid-rapidity, in proton-proton collisions and $\sqrt{s}=7$ TeV, based on the excellent particle identification capabilities of ALICE.

The statistical subtraction of a cocktail that accounts for photonic electrons and other background sources, built on the base of ALICE measured meson spectra, provides a measurement of the production cross section of electrons from heavy-flavour hadron decays. The further subtraction of the charm component, obtained from the D meson cross section measured by ALICE in the same rapidity range, as well as an analysis of impact parameter distributions relative to the interaction vertex, allow to determine the electron spectrum from pure beauty decays.

The results will be presented, compared to theoretical predictions, and discussed in the perspective of obtaining a reference for the studies of heavy quark energy loss in the Quark-Gluon Plasma.

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