

Measurement of B meson production in pp collisions at $\sqrt{s} = 7$ TeV via displaced electrons in ALICE

The measurement of the production cross-section of B mesons in pp collisions at LHC energies is important in two respects. First, it allows one to test perturbative quantum chromodynamics calculations. Secondly, it provides an essential reference for studies in heavy-ion collisions, in which a hot and dense medium, the quark-gluon plasma (QGP), is expected to be formed. When passing through this medium, quarks lose energy via the strong interaction. Since the amount of energy loss should depend significantly on the quark mass, beauty as the heaviest observable flavour is of particular interest for the exploration of QGP properties.

The presented poster will focus on methods and results of the analysis of displaced electrons from the B meson's semielectronic decay channels in ALICE, at pseudorapidities $|\eta| < 0.5$.

First, the electron identification in the ALICE central barrel, using the Time Projection Chamber (TPC) and Time Of Flight (TOF) detector will be outlined. The selection of electrons with a large displacement from the primary vertex will be detailed. This makes use of the larger B meson mean proper decay length ($\sim 500 \mu\text{m}$) in comparison to D mesons and other electron sources. The method for estimation of the remaining electron background in the selected sample will be presented, based on calculations using ALICE measured p_t spectra of π^0 and D mesons. Finally, the p_t spectrum of electrons from B decays measured in pp collisions at $\sqrt{s} = 7$ TeV will be shown.

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