Contribution ID: **62** Type: **Talk**

Open charm and J/ψ production as a function of the charged particle multiplicity density in pp collisions at √s = 7 TeV with ALICE at the LHC

Tuesday 3 December 2013 11:45 (30 minutes)

The study of heavy-flavour hadron production as a function of the charged particle multiplicity in pp collisions helps one to understand the interplay between hard and soft QCD processes, in particular it allows one to study the role of Multi-Parton Interactions (MPI). At the LHC energies the MPI might affect not only processes involving light quarks and gluons, but also the hard momentum scales relevant for open heavy-flavour and J/ψ production. This could induce a correlation between the yield of heavy-flavour hadrons and the total charged particle multiplicity. In ALICE, the production of prompt D mesons, reconstructed at central rapidity ($|y| < 0.9$) via hadronic decay channels, and inclusive J/ψ, measured at both central and forward ($2.5 < y < 4$) rapidity via di-electron and di-muon decay channels respectively, has been studied in pp collisions at $\sqrt{s} = 7$ TeV as a function of the charged particle multiplicity density. Furthermore, the fraction of J/ψ coming from beauty hadron decays has been measured at central rapidity, providing the multiplicity dependence of beauty hadron production. In this talk results on open charm and J/ψ multiplicity dependence in pp collisions at $\sqrt{s} = 7$ TeV will be discussed. Predictions from selected Pythia tunes will also be shown.

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Session Classification: MPI & Double Parton Scattering

Track Classification: MPI & Double Parton Scattering