

Charm and beauty production at forward rapidity with ALICE

Monday 23 September 2024 15:20 (20 minutes)

In hadronic collisions, charm and beauty quarks are mainly produced in hard partonic scatterings due to their large masses. Thus, they are ideal tools to investigate various aspects of perturbative QCD. In addition, measurements in pp collisions represent a baseline for cold nuclear matter studies in p-A collisions, and for the characterization of the hot and dense medium, the quark-gluon plasma (QGP), formed in A-A interactions. In ALICE, it is possible to reconstruct dileptons both in the dielectron channel at midrapidity ($|y| < 0.9$) in the central barrel, and in the dimuon channel at forward rapidity ($2.5 < y < 4$) with the muon spectrometer. In particular, the continuum region between charmonium and bottomonium resonances, as well as that beyond bottomonia, are significantly populated by the semileptonic decays of hadron pairs containing charm or beauty quarks. In this contribution, a first measurement of heavy-flavor cross sections in pp collisions at $\sqrt{s} = 13$ TeV and forward rapidity will be presented. Additionally, the separate measurement of single muons from charm- and beauty-hadron decays in pp and Pb-Pb collisions from the LHC Run 3, collected with the upgraded ALICE apparatus exploiting the vertexing capabilities of the new Muon Forward Tracker (MFT), will also be reported.

Category

Experiment

Collaboration

ALICE

Primary authors: COLLABORATION, ALICE; PENNISI, Michele (Universita e INFN Torino (IT))

Presenter: PENNISI, Michele (Universita e INFN Torino (IT))

Session Classification: Parallel 2: heavy quark production

Track Classification: 3. Heavy quarks and quarkonia