

Heavy-flavor production in PbPb collisions at the LHC measured with the ALICE detector

Friday, 27 May 2011 09:25 (25 minutes)

The ALICE experiment studies nucleus–nucleus collisions at the LHC in order to investigate the properties of QCD matter at extreme energy densities. The measurement of open charm and open beauty production allows to investigate the mechanisms of heavy-quark propagation, energy loss and hadronization in the hot and dense medium formed in high-energy nucleus-nucleus collisions. In particular, in-medium energy loss is predicted to be different for massless partons (light quarks and gluons) and heavy quarks at moderate momentum.

The ALICE apparatus allows us to measure open heavy-flavour particles in several decay channels and with a wide phase-space coverage.

We present the first results on the nuclear modification factors for heavy flavour particle production in Pb–Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV.

Using proton–proton and lead–lead collision samples at $\sqrt{s} = 7$ TeV and $\sqrt{s_{NN}} = 2.76$ TeV, respectively, recorded during 2010, nuclear modification factors $R_{AA}(p_T)$ were measured for D mesons at central rapidity (via displaced decay vertex reconstruction), and for electrons and muons from heavy flavour decays, at central and forward rapidity, respectively.

Presenter: DAINESE, Andrea (INFN Padova)

Session Classification: Heavy flavor and Quarkonia in medium

Track Classification: Heavy flavor and quarkonia production