



Contribution ID: 229

Type: Parallel talk

Probing heavy quark dynamics in PbPb collisions with CMS

Thursday 11 July 2019 17:24 (20 minutes)

Measurements of heavy flavour hadrons in PbPb collisions provide information about the heavy quark dynamics inside the quark-gluon plasma (QGP). Heavy quarks are sensitive to the transport properties of the medium and may interact with the QCD matter differently from light quarks. At low p_T , heavy quarks provide a direct window on the in-medium QCD force. At high p_T , the comparison of results for light and heavy particles provides insights into the expected flavor dependence of in-medium parton energy loss. Recently, the CMS collaboration established a comprehensive heavy flavor program in heavy ion collisions including the detection of charm and beauty mesons. Using the large statistics heavy ion data samples collected during LHC Run2, high precision open charm and beauty measurements are performed over a wide transverse momentum range. In this talk, the first measurement of the radial distributions of D_0 mesons in jets in PbPb and pp collisions is presented, sensitive to the energy loss and diffusion of charm quarks in the QGP. Such effects for the bottom quarks are probed with the measurement of D_0 mesons from b hadron decays in pp and PbPb collisions. In addition, the hadronisation of charm quarks and the importance of coalescence are constrained with the study of Λ_c baryons in pp and PbPb collisions. Finally, results on D_s and B_s production are reported and compared to D_0 and B^+ production, respectively, with implications on the importance of the recombination mechanism due to strangeness enhancement.

Author: MEYER, Arnd (Rheinisch Westfaelische Tech. Hoch. (DE))**Presenter:** VERES, Gabor (Eotvos Lorand University (HU))**Session Classification:** Heavy Ion Physics**Track Classification:** Heavy Ion Physics