

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 204

Typ: Talk

Open heavy flavor production in $p\text{Pb}$ and PbPb collisions at LHCb

Dienstag, 28. März 2023 09:00 (20 Minuten)

Heavy quarks are produced in the early stage of heavy ion collisions due to their large mass, and experience the entire evolution of the QCD medium. The baryon-to-meson ratio, in particular, the Λ_c^+/D^0 ratio, provides valuable information on charm hadronization mechanisms, testing the role of coalescence in the Quark-Gluon Plasma created in PbPb collisions. In $p\text{Pb}$ collisions, heavy quarks are essential to study cold nuclear matter effects, which include the modification of nuclear parton distribution functions, energy loss in the nucleus, and other effects, providing a crucial baseline for interpreting PbPb measurements. In this talk, the first LHCb open charm measurement in PbPb collisions, the Λ_c^+/D^0 ratio, will be presented. Moreover, this presentation will show precision measurements of open charm production from a rich set of charmed hadrons in $p\text{Pb}$ collisions at 5.02 and 8.16 TeV, including the first measurement of Ξ_c^+ baryons in heavy ion collisions. The nuclear modification factor $R_{p\text{Pb}}$, forward-backward ratio R_{FB} and particle production ratios of charm baryons and mesons will be discussed and compared to models.

Experiment/Theory

LHCb

Affiliation

On behalf of LHCb

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Sitzung Einordnung: Parallel: Heavy Flavours & Quarkonia

Track Klassifizierung: Heavy flavor and quarkonia