

Λ_C^+ production in pp and PbPb collisions at 5.02 TeV with the CMS experiment

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Due to their large mass, the interactions of heavy quarks with the quark-gluon plasma (QGP) may be different from those of light quarks. The lightest charm baryon is the Λ_C^+ , composed of a charm quark and two light quarks. Measurements of Λ_C^+ production in both pp and PbPb collisions can provide important inputs to the understanding of heavy quark transport in the QGP and the creation of heavy quark mesons and baryons via coalescence. Models involving quark coalescence predict a large enhancement of Λ_C^+ production in PbPb collisions compared to pp collisions. The high luminosity datasets collected at a nucleon-nucleon center-of-mass energy of 5.02 TeV using the CMS detector have been used to measure Λ_C^+ production in both pp and PbPb collisions via the $\Lambda_C^+ \rightarrow P^+ K^- \pi^+$ decay channel. Results for differential cross sections for Λ_C^+ and ratios of Λ_C^+ over D^0 yields in pp and PbPb collisions, as well as the nuclear modification factors for Λ_C^+ , are presented.

Summary

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