

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



Beitrag ID: 162

Typ: Talk

Studies of heavy quark dynamics using B mesons with the CMS detector

Donnerstag, 30. März 2023 10:20 (20 Minuten)

Heavy quarks are one of the most important probes to study the properties of quark-gluon plasma (QGP). We present new results on nuclear modification factors of B_s^0 and B^+ mesons in pp and PbPb collisions at 5.02 TeV, using data recorded with the CMS detector in 2017 and 2018. The reported B meson nuclear modification factors over an extended transverse momentum range will provide important information about the diffusion of beauty quarks and the flavor dependence of in-medium energy loss. In addition, understanding the hadronization mechanism is crucial for extracting the transport properties of the QGP. The B_s^0/B^+ yield ratio in pp and PbPb can thus shed light on beauty hadronization mechanisms from small to large systems and on the relevance of parton recombination in the medium. We also report the first observation of the B_c^+ meson in nucleus-nucleus collisions. Given the low production cross-section in pp collisions, its production could be significantly enhanced by the recombination of beauty with charm quarks present in the hypothesized medium, providing additional insights into the recombination mechanism.

Experiment/Theory

CMS

Affiliation

CMS

Hauptautor: SHENG, Tzu-An (MIT)

Vortragende(r): SHENG, Tzu-An (MIT)

Sitzung Einordnung: Parallel: Heavy Flavours & Quarkonia

Track Klassifizierung: Heavy flavor and quarkonia