

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



Beitrag ID: 250

Typ: Talk

Using direct γ production to disentangle contributions from centrality biases and final state effects to high pt π^0 production in d+Au collisions at 200 GeV.

Dienstag, 28. März 2023 16:30 (20 Minuten)

PHENIX presents the simultaneous measurement of high pt (8-18 GeV/c) direct γ and π^0 production in d+Au collisions at 200 GeV. The analysis is performed for different events samples selected by event activity. The direct γ -to- π^0 ratio is independent of event activity, except for events with the highest activity where the ratio is slightly enhanced. Final state effects are expected to be small for direct photons and initial state effects are expected to be similar for direct γ and π^0 . Therefore, the new PHENIX results suggest that π^0 production is suppressed in the final state of the most central d+Au collisions. Expressed as nuclear modification factor R_{xA} , this suppression is about 20%. Here R_{xA} is determined in a model independent way, by quantifying the effective number of binary collisions from the ratio of direct photons measured in d+Au compared to p+p collisions. To establish if the suppression is linked to energy loss, PHENIX is currently analyzing p+Au and $^3\text{He}+\text{Au}$ collisions. In this talk the latest results will be presented.

Experiment/Theory

PHENIX

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Sitzung Einordnung: Parallel: Electromagnetic & Electroweak Probes

Track Klassifizierung: Electromagnetic and electroweak probes