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Measurement of the event multiplicity dependence of J/ψ production in $p+p$ collisions at $\sqrt{s} = 500$ GeV with STAR at RHIC

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We present a new high-statistics measurement of inclusive J/ψ production versus event multiplicity in $p+p$ collisions at $\sqrt{s} = 500$ GeV with the STAR experiment at RHIC. At mid-rapidity, calorimeter-triggered events are selected for candidate J/ψ detection in the dielectron decay channel. Existing measurements at both $\sqrt{s} = 200$ GeV from STAR and $\sqrt{s} = 7$ TeV from ALICE have shown a faster-than-linear rise as a function of mid-rapidity multiplicity. Potential dependence on collision energy is examined, and measurements are made separately for several intervals over a broad J/ψ transverse momentum range. Proposed explanatory mechanisms, including multi-parton interactions, string screening, and high gluon radiation are discussed, along with the guidance this measurement and related probes provide to model calculations.

Experiment/Theory

STAR

Affiliation

STAR

Primary author: SCHAEFER, Brennan (Lehigh University)

Vortragende(r): SCHAEFER, Brennan (Lehigh University)

Sitzung Einordnung: Poster Session

Track Klassifizierung: Heavy flavor and quarkonia