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

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.