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PHENIX J/ψ measurements in p+Al, p+Au, and ^{3}He+Au collisions

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Nuclear modification of charmonium in small systems is thought to be caused by a combination of initial-state effects in the charm quark production, such as depletion from gluon shadowing and Cronin enhancement, and final-state breakup through comoving particles. The timescale of a charmonium state to neutralize with respect to the duration of the charmonium crossing the nuclear media may also be relevant. The PHENIX collaboration measured J/ψ yields in p+Al, p+Au and ^{3}He+Au at $\sqrt{s_{NN}}$ = 200 GeV at forward and backward rapidities ($1.2 < |y| < 2.2$). Along with previous d+Au data, these measurements comprise the most extensive study of inclusive J/ψ in small systems including dependence on system size, centrality, transverse momentum, and rapidity, all at the same collision energy. This presentation will show the conclusion of this experimental effort and discuss the implications on the current understanding of charmonia interaction with nuclear media.

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