

Observation of double J/ψ production in pPb collisions

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The first observation of the concurrent production of two J/ψ mesons in proton-nucleus collisions will be presented. The analysis is based on a data sample recorded at a nucleon-nucleon center-of-mass energy of 8.16 TeV by the CMS experiment at the CERN LHC corresponding to an integrated luminosity of 174.6 nb^{-1} . The J/ψ mesons are reconstructed in their $\mu^+\mu^-$ decay channel for transverse momenta $p_T > 6.5 \text{ GeV}$ and rapidity $|y| < 2.4$. The measured inclusive fiducial cross section $\sigma(\text{pPb} \rightarrow J/\psi J/\psi + X)$ will be compared to theoretical perturbative quantum chromodynamics predictions at next-to-leading-order accuracy, including nuclear parton densities effects, for the production of two J/ψ mesons in single- (SPS) and double- (DPS) parton scatterings. The measurement of the double J/ψ cross section in pp collisions at 13 TeV may also be reported.

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