



## Photoproduction of $J/\psi$ and of high mass $e^+e^-$ in ultra-peripheral Au + Au collisions at $\sqrt{s_{NN}} = 200$ GeV

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## ABSTRACT

We present the first measurement of photoproduction of  $J/\psi$  and of two-photon production of high-mass  $e^+e^-$  pairs in electromagnetic (or ultra-peripheral) nucleus–nucleus interactions, using Au + Au data at  $\sqrt{s_{NN}} = 200$  GeV. The events are tagged with forward neutrons emitted following Coulomb excitation of one or both Au\* nuclei. The event sample consists of 28 events with  $m_{e^+e^-} > 2$  GeV/ $c^2$  with zero like-sign background. The measured cross sections at midrapidity of  $d\sigma/dy(J/\psi + Xn, y = 0) =$

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