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Measurements of vector meson photoproduction with ALICE in ultra-peripheral Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV

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The intense photon fluxes of relativistic nuclei provide a possibility to study photonuclear and two-photon interactions in ultra-peripheral collisions (UPC) where the nuclei do not overlap and no strong nuclear interactions occur. The study of such collisions provides information about the initial state of nuclei (nPDF).

Exclusive J/ψ production in UPC which is sensitive to the nuclear gluon distribution: first ALICE results from LHC Run 2 will be presented for this channel for both forward and mid-rapidity J/ψ . The increased statistics and the higher collision energy allows for a more detailed study of lower values of Bjorken- x .

The analysis of the $\gamma + A \rightarrow \rho^0 + A$ process in UPC is a tool to test the, so-called, black disk regime where the target nucleus appears like a black disk and the total $\rho^0 + A$ cross section reaches its quantum mechanical limit.

ALICE reports new measurements of ρ^0 photoproduction cross sections in Pb-Pb UPC at $\sqrt{s_{NN}} = 5.02$ TeV at mid-rapidity which are compared to predictions.

Experimental Collaboration

ALICE Collaboration

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