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Vector meson photoproduction in ultra-peripheral Pb-Pb collisions with ALICE at √sNN=5.02 TeV

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The study of photonuclear and two-photon interactions in ultra-peripheral collisions (UPC) is a tool to learn about the initial state of nuclei. In such collisions, the nuclei do not overlap and strong nuclear interactions are suppressed.

New ALICE results from LHC Run 2 are presented for forward J/ψ photoproduction, which is sensitive to the nuclear gluon distribution. The large data sample allows for a more detailed study of the cross section as a function of rapidity.

In addition, the analysis of the γ+A →ρ0+A process in UPC tests the black disk regime, where the target nuclei appears like a black disk and the total ρ0+A cross section reaches its limit. Cross sections of ρ0 photoproduction in Pb-Pb UPC are measured at mid-rapidity and compared to predictions based on the Glauber model and the color dipole approach.

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