

DIS 2015

XXIII International Workshop on
Deep-Inelastic Scattering and
Related Subjects

Dallas, Texas
April 27 – May 1, 2015



Contribution ID: 288

Type: not specified

ALICE results on ultra-peripheral p-Pb and Pb-Pb collisions

Wednesday 29 April 2015 09:45 (25 minutes)

Ultra-relativistic heavy ions generate strong electromagnetic fields, which offer the possibility to study gamma-gamma, gamma-nucleus and gamma-proton processes at the LHC in ultra-peripheral Pb-Pb and p-Pb collisions (UPC). Exclusive photoproduction of vector mesons is sensitive to the gluon distribution of the interacting target (proton or nucleus). The reactions allow one to study saturation phenomena (p-Pb) and nuclear gluon shadowing (Pb-Pb).

Here we present results from the ALICE measurement of coherent photoproduction in Pb-Pb UPC at $\sqrt{s_{NN}} = 2.76$ TeV of J/ψ mesons at forward and central rapidity and ρ^0 and $\psi(2S)$ mesons at central rapidity. Furthermore, we also show our results on the J/ψ photoproduction in p-Pb UPC at $\sqrt{s_{NN}} = 5.02$ TeV in the forward and backward rapidities where the rapidity is measured in the laboratory frame with respect to the proton beam direction.

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Session Classification: WG2 Small-x, Diffraction and Vector Mesons

Track Classification: WG2 Small-x, Diffraction and Vector Mesons