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Recent results on ultra-peripheral Pb-Pb and p-Pb collisions at the ALICE experiment

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The electromagnetic fields surrounding the protons and nuclei, accelerated by the LHC, lead to very large cross sections for photon-induced processes. This makes the LHC the world's most powerful collider not only for protons and lead ions but also for photon-photon and photon-hadron collisions. These interactions can be studied in ultra-peripheral collisions, where the impact parameters are larger than the sum of the nuclear radii and hadronic interactions are suppressed.

Exclusive vector meson production in heavy-ion collisions is expected to probe the nuclear gluon density, for which there is considerable uncertainty at low values of Bjorken- x . The first LHC measurement on UPC was recently carried out with the ALICE experiment [1-2]. During the 2010 and 2011 Pb+Pb runs at the LHC, as well as in the p+Pb run in 2013, ALICE collected data using dedicated triggers to select ultra-peripheral collisions. These triggers were based on the Muon spectrometer, the Time-of-Flight detector, the Silicon Pixel detector, and the VZERO scintillator array. Information from other detectors was also used in the analysis, mainly to ensure the exclusivity of the reaction. The photoproduction cross section of J/ψ meson at forward and central rapidities in Pb-Pb collisions have been measured [1-2]. These results have been compared to model calculations and their implications for nuclear gluon shadowing will be discussed in this talk.

Furthermore, first results on exclusive J/ψ photoproduction in p+Pb collisions will be given. Other ongoing analyses on ultra-peripheral collisions will also be discussed.

1. B.Abelev,etal.(ALICECollaboration) Phys.Lett.B718(2013)1273-1283
2. E.Abbas,etal.(ALICECollaboration) <http://arxiv.org/abs/arXiv:1305.1467>

Author: TAPIA TAKAKI, Daniel (Universite de Paris-Sud 11 (FR))

Presenter: TAPIA TAKAKI, Daniel (Universite de Paris-Sud 11 (FR))

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