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Vector meson photoproduction in ultra-peripheral p-Pb and Pb-Pb collisions at the LHC with the ALICE experiment

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Vector mesons are copiously produced in ultra-peripheral collisions(UPC).
In these collisions, the impact parameter is larger than the sum of the nuclear radii, implying that electromagnetic processes become dominant.

The cross section for heavy vector meson production is expected to be sensitive to the gluon distribution and can therefore probe nuclear gluon shadowing (Pb-Pb) and the gluon structure function in the nucleon (p-Pb).

The ALICE Collaboration has performed the first measurements of the ρ^0, J/ψ and ψ(2S) UPC cross section in Pb-Pb collisions and that for exclusive J/ψ photoproduction off protons in ultra-peripheral proton-lead collisions at the LHC.

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