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## Illuminating the impact-parameter dependence of UPC dijet photoproduction

*Wednesday 6 September 2023 10:10 (20 minutes)*

In this talk, we present new NLO pQCD predictions for photoproduction of dijets in UPC PbPb collisions at 5.02 TeV with realistic photon flux and up-to-date nuclear parton distribution functions (nPDFs). We calculate nuclear form factor for the impact parameter-dependent flux using Woods-Saxon density profile and compare the result to a widely-used point-like approximation. We show that a significant portion of the measured dijets at large measurable  $z_\gamma$  (correspondingly small  $x_A$ ) originate from events with relatively small impact parameters of the order of few nuclear radii, and the cross section predictions therefore become sensitive to the modelling of the nuclear geometry and photon flux close to the source nucleus. We comment on the implications of these findings for the use of UPC dijets as a constraint of nPDFs.

### Category

Theory

### Collaboration (if applicable)

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