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Photo-nuclear jet production in Pb+Pb collisions with the ATLAS detector

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Beams of relativistic heavy ions are accompanied by a large flux of equivalent photons, and thus photon-induced reactions are the dominant interaction mechanism in heavy-ion collisions when the colliding nuclei have transverse separation larger than the nuclear diameter. In these ultra-peripheral collisions (UPCs) the photon can provide a clean probe of the partonic structure of the nucleus analogous with deep inelastic scattering. This talk presents a new measurement of dijet production in ultra-peripheral Pb+Pb collisions performed with the ATLAS detector using high-statistics 2018 Pb+Pb data. Events are selected using requirements on rapidity gaps and forward neutron production to identify the photo-nuclear processes. The relatively clean environment of these events allows for precision measurements in a phase-space regions where significant nuclear PDF modifications are expected to be present, and which are not strongly constrained by previous measurements.

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