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Measurement of light-by-light scattering in ultra-peripheral Pb+Pb collisions with the ATLAS detector

Thursday 29 July 2021 16:30 (15 minutes)

In ultra-relativistic heavy-ion collisions, one expects copious rates of $\gamma + \gamma$ processes through the interaction of the large electromagnetic fields of the nuclei which can lead to light-by-light scattering via loop diagrams. This process was directly observed for the first time in UPCs at the LHC by ATLAS. Final measurements of light-by-light scattering with full run 2 dataset with substantially reduced uncertainties will be presented. This process provides a precise and unique opportunity to investigate extensions of the Standard Model such as axion-like particles.

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Collaboration / Activity

ATLAS

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