

Ultra-peripheral physics with ATLAS

Saturday, 25 September 2021 14:00 (25 minutes)

This talk gives an overview of the latest ultra-peripheral physics measurements performed with the ATLAS detector at the LHC. These include differential measurements of the exclusive di-muon production cross-section, which are crucial for setting constraints on the initial photon spectrum for all UPC measurements at the LHC; measurements of light-by-light scattering, which result in an observation of this elusive Standard Model process and set competitive limits on the parameter space for axion-like particles; measurements of electromagnetic di-muon production in non-UPC Pb+Pb collisions, which are sensitive to the structure of the initial EM fields and possibly EM content of the created Quark-Gluon Plasma; and measurements of collective behavior in high-multiplicity photo-nuclear collisions.

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