



Contribution ID: 53

Type: **Talk**

Photon-photon fusion and tau $g-2$ measurement

Thursday 1 September 2022 15:30 (20 minutes)

Relativistic heavy-ion beams at the LHC are accompanied by a large flux of equivalent photons, leading to multiple photon-induced processes. This talk presents a series of measurements of such processes performed by the ATLAS Collaboration. New measurements of exclusive dilepton production (electron, muon, and tau pairs) are discussed. Furthermore, the tau-pair production measurements can constrain the tau lepton's anomalous magnetic dipole moment. High statistics measurements of light-by-light scattering shown in this talk provide a precise and unique opportunity to investigate extensions of the Standard Model, such as the presence of axion-like particles. Presented measurements of muon pairs produced via two-photon scattering processes in hadronic Pb+Pb collisions provide a novel test of strong-field QED by exploiting correlations between the lepton pair and second-order event-plane, which can potentially be a sensitive electromagnetic probe of the quark-gluon plasma. Results are compared with recent theory calculations.

Details

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Is the speaker for that presentation defined?

Yes

Is this abstract from experiment?

Yes

Name of experiment and experimental site

ATLAS

Internet talk

Maybe

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