

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 126

Typ: Talk

BSM physics using photon-photon fusion processes in UPC in Pb+Pb collisions with the ATLAS detector

Dienstag, 28. März 2023 16:50 (20 Minuten)

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 searches for physics beyond the standard model enabled by photon-photon processes in both di-tau and di-photon final states. The tau-pair production measurements can constrain the tau lepton's anomalous magnetic dipole moment ($g-2$), and a recent ATLAS measurement using muonic decays of tau leptons in association with electrons and tracks provides one of the most stringent limits available to date. Similarly, light-by-light scattering proceeds via loop diagrams, which can contain particles not yet directly observed. Thus, 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.

Experiment/Theory

ATLAS

Affiliation

ATLAS Collaboration

Hauptautor: OGRODNIK, Agnieszka (Prague CU)

Vortragende(r): OGRODNIK, Agnieszka (Prague CU)

Sitzung Einordnung: Parallel: Electromagnetic & Electroweak Probes

Track Klassifizierung: Electromagnetic and electroweak probes