



Contribution ID: 194

Type: **Talk**

## Photon-photon fusion and ultra-peripheral physics with ATLAS

*Tuesday, 13 July 2021 15:10 (20 minutes)*

Photon-photon fusion is a rare process at hadron and ion colliders. It is particularly interesting as a remarkably clean interaction with little (if any) remnant activity from the interacting particles. In this talk we present the status of photon-photon fusion measurements at the ATLAS detector. We present differential measurements of the light-by-light scattering process,  $\gamma\gamma \rightarrow \gamma\gamma$ , in lead-lead collisions. In addition, we present photon-photon fusion measurements using events that contain two charged leptons in the final state. The scattered proton is detected by the ATLAS Forward Proton spectrometer while the leptons are reconstructed by the central ATLAS detector. Finally, we highlight the observation of photon-induced  $WW$  production.

### Preferred track

Forward & Diffractive Physics

**Primary author:** ATLAS COLLABORATION

**Co-author:** VARNES, Erich Ward (University of Arizona (US))

**Presenter:** STASZEWSKI, Rafał (IFJ PAN Cracow (PL))

**Session Classification:** Forward and diffractive physics

**Track Classification:** Forward and diffractive physics