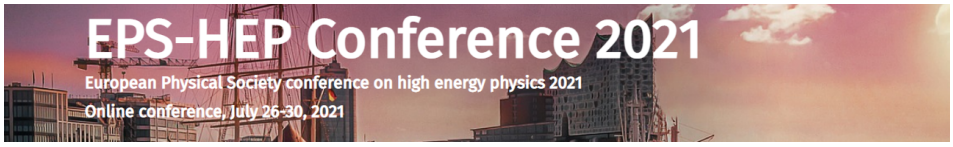

Contribution ID: **471** Type: **Parallel session talk**

New electroweak challenges and opportunities at the LHeC

Thursday 29 July 2021 17:00 (15 minutes)

The Large Hadron-Electron Collider (LHeC) will operate at $\sqrt{s}$ = 1.2 TeV and accumulate about 1/ab of integrated electron-proton luminosity [1]. We report here results of a novel study of high energy photon-photon interactions at the LHeC, at the ⊠⊠ center-of-mass energy of up to 1 TeV, opening new frontiers in the electroweak physics. Despite very high *ep* luminosity, the experimental conditions will be very favorable at the LHeC –a negligible event pileup will allow for unique studies of exclusive production via two-photon fusion. We discuss a number of such processes, as ⊠⊠ → *WW* for example, including estimates of their principal backgrounds. We conclude by evaluating the impact of measurements at the LHeC of such two-photon interactions on testing of the electroweak sector of Standard Model and searches for physics beyond the SM.

[1] P. Agostini et al. (LHeC Study Group), *The Large Hadron-Electron Collider at the HL-LHC*, accepted by J. Phys. G; https://arxiv.org/abs/2007.14491.

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