Contribution ID: **313** Type: **Posters**

Production of isolated and virtual photons and pion-photon correlations in high-energy pp and pA collisions

A phenomenological study of the isolated photon and dilepton production in association with leading hadron in pp and pA collisions at RHIC and LHC energies is performed. Using the color dipole approach we investigate the production cross section differential in the
transverse momentum of the photon (di-lepton pair) considering three different phenomenological models for the universal dipole cross section. We also present the predictions for the rapidity dependence of the ratio of pA to pp cross sections. As a further test of the formalism, for different energies and photon rapidites we analyse the correlation function in azimuthal angle $\Delta\phi$ between the photon and a forward pion. The characteristic double-peak structure of the correlation function around $\Delta\phi \simeq \pi$ observed previously for Drell-Yan pair production is found for isolated photon emitted into the forward rapidity region which can be tested by future experiments.

The talk is based on updated material published in Phys. Rev. D \textbf{101}, no.9, 094019 (2020) and Phys. Rev. D \textbf{93}, no.3, 034023 (2016).

Submitted on behalf of a Collaboration?

No

Author: Dr SUMBERA, Michal (Nuclear Physics Institute, Acad. of Sciences of the Czech Rep. (CZ))

Co-authors: PASECHNIK , Roman (Lund university); GONCALVES, Victor Paulo Barros (Instituto de Fisica e Matematica Universidade Federal de Pelotas)

Presenters: Dr SUMBERA, Michal (Nuclear Physics Institute, Acad. of Sciences of the Czech Rep. (CZ)); GONCALVES, Victor Paulo Barros (Instituto de Fisica e Matematica Universidade Federal de Pelotas)

Session Classification: WG2: Small-x, Diffraction and Vector Mesons

Track Classification: WG2: Small-x, Diffraction and Vector Mesons