ICHEP 2022 BOLOGNA
ICHEP 2022 XLI International Conference on High Energy Physics Bologna (Italy)
6 13 07 2022

Contribution ID: **122** Type: **Parallel Talk**

Neutral meson measurements in ALICE in pp collisions at $\sqrt{s} = 13$ TeV

Thursday, 7 July 2022 11:30 (15 minutes)

The measurement of neutral mesons in pp collisions allows a test of perturbative QCD calculations and represents an important baseline for heavy-ion studies. Neutral mesons are reconstructed in ALICE with multiple methods in a very wide range of transverse momenta and thus impose restrictions on the parton distribution functions and fragmentation functions over a wide kinematic region. Moreover, observations in high-multiplicity pp and p-Pb collisions show surprising similarities with those in heavy-ion collisions. Measured identified particle spectra in hard pp collisions give further insight into the hadron chemistry in such high charged-particle multiplicity events.

In this talk, detailed measurements of the neutral pion, eta and omega mesons will be presented in several multiplicity classes in pp collisions at $\sqrt{s}$ = 13 TeV. The different analysis techniques using two different calorimeters and the reconstruction of conversion photons via their e^+e^- pairs will be briefly explained. In particular, the inclusion of the merged photon clusters analysis using the calorimeter allows the extension of the neutral pion measurement up to an unprecedented high p_{T} of 200 GeV/c in pp and p-Pb collisions for identified hadron spectra. Results will be compared to pQCD calculations.

In-person participation

Yes

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Session Classification: Strong interactions and Hadron Physics

Track Classification: Strong interactions and Hadron Physics