



Contribution ID: 40

Type: **Talk**

Understanding the initial state effects by the measurement of the Drell-Yan process in pPb collisions with CMS

Tuesday 14 June 2022 15:20 (20 minutes)

Drell-Yan process is considered as one of the essential probes to understand the initial state of the nucleons presented as the parton distribution function (PDF) for stand-alone nucleon and nuclear PDF (nPDF) for confined nucleon in the nucleus. In LHC era, Z and W boson productions in pPb and PbPb collisions have been used to investigate the initial state effects. In this presentation, we report the results of the Drell-Yan process in pPb collisions at a center of mass energy of 8.16 TeV with the CMS detector. The differential cross sections are presented versus dimuon p_T , rapidity and ϕ^* in a wider dimuon mass region that includes not only the Z boson mass range but also the lower mass region down to 15 GeV. In addition, the forward-backward asymmetries are shown in both mass regions, where the uncertainties are found to be smaller than in model calculations. The results in the Z mass region are the most precise to date, while the measurements in the lower mass region allow access to a new phase space for nPDF studies with lower longitudinal momentum fraction x and lower energy scale Q^2 . All results are compared to EPPS16, and nCTEQ15WZ nPDFs, and the free-proton PDF CT14, to better understand the nuclear PDF and the sensitivity of the models in pPb collisions.

Present via

Offline

Primary author: KIM, Hyunchul (Chonnam National University (KR))

Presenter: KIM, Hyunchul (Chonnam National University (KR))

Session Classification: PA-Other topics

Track Classification: Other topics