



XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 474

Type: **Contributed Talk**

Z and W production in pp, pPb and PbPb collisions with CMS

Monday, May 19, 2014 5:10 PM (20 minutes)

The weak bosons, Z and W, do not participate in the strong interaction, and thus constitute clean probes of the initial state of nuclear collisions. Detected through their leptonic decay channels, they provide constraints on the nuclear parton distribution functions (PDF). In particular the W boson provides a unique constraint on the sea quark distributions. We report on CMS measurements of weak boson production in pp, pPb and PbPb. Particular emphasis is placed on measurements of the 35 nb⁻¹ of pPb data collected at the beginning of 2013. This provides access to a Bjorken x region, 10⁻³ – 1, which is lacking precision experimental measurements needed by nuclear PDF parametrizations. The Z boson nuclear modification factors as a function of transverse momentum and rapidity will be shown, together with forward to backward ratios. The W boson yields, charge asymmetries, and forward to backward ratios in pPb collisions will also be reported. With a production cross section an order of magnitude larger than the Z, the W allows precise comparisons to theoretical predictions. Comparisons to PDFs are made for both Z and W measurements.

On behalf of collaboration:

CMS

Primary author: ZSIGMOND, Anna (Wigner RCP, Budapest (HU))

Presenter: ZSIGMOND, Anna (Wigner RCP, Budapest (HU))

Session Classification: Electromagnetic probes

Track Classification: Electromagnetic Probes