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Type: **Parallel Talk**

## Electroweak boson production measurements in p-Pb and Pb-Pb collisions at 5.02 TeV with ALICE

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Insensitive to the strong interaction, the electroweak W and Z bosons are clean observables for the initial state of heavy-ion collisions. Their measurement in p-Pb and Pb-Pb collisions provides constraints on the nuclear parton distribution functions (nPDFs) of (anti)quarks. In particular, the W and Z rapidity-differential production cross sections and the decay lepton charge asymmetry as a function of rapidity provide stringent tests of nPDFs. Electroweak boson measurements in heavy-ion collisions also constitute a reference for medium-induced effects on other probes.

In this contribution, the measurement of W and Z-boson production in p-Pb and Pb-Pb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV at forward rapidity ( $2.5 < y_{lab} < 4.0$ ) with ALICE at the LHC will be presented. These measurements are complementary to those by ATLAS and CMS at central rapidity, and more precise than the LHCb measurements with similar rapidity coverage. Rapidity differential measurements of W and Z, as well as of the charge asymmetry of W-decay leptons, in p-Pb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV will be discussed.

Final results on the Z production cross section in Pb-Pb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV will be shown together with the first measurement of W production at forward rapidity. Results will be compared with model calculations including nPDFs. In addition, the centrality dependence of W yields in p-Pb and Pb-Pb collisions and of Z production in Pb-Pb collisions will be discussed.

### Content type

Experiment

### Collaboration

ALICE

### Centralised submission by Collaboration

Presenter name already specified

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