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W and Z bosons in pp, pPb and PbPb with CMS

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Electroweak boson production is an important benchmark process in high-energy heavy-ion collisions at the LHC. W and Z bosons do not participate in the strong interaction and their leptonic decays provide medium-blind probes of the initial state of the collisions. The final results on the W and Z production in pPb collisions at 5.02 TeV, combining both the muon and electron channels, will be presented. When compared to theory calculations that include nuclear modifications to the parton distributions, data show a clear sensitivity to this type of effects. The final results in PbPb collisions at 2.76 TeV, compared to pp collisions at the same center of mass energy, will also be presented. The centrality dependence confirms the binary scaling of hard probes in heavy-ion collisions, while the differential cross sections points to initial state effects small compared to the statistical precision of the available data.

On behalf of collaboration:

CMS

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