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## Heavy electroweak boson production in Pb+Pb collisions with ATLAS

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Electroweak bosons provide a unique opportunity to extract the information about the beginning of the temporal evolution of the heavy-ion collision system and understand how the cold nuclear matter effects influence the observables that are measured in heavy-ion collisions.  $Z$  and  $W$  bosons decaying in leptonic channels are unaffected by the presence of the quark-gluon plasma and carry the information from the time when bosons were created, i.e. from the moment of the collision itself. Measurement of  $Z$  and  $W$  bosons allows to quantify the modification of the nuclear parton distribution functions and verify our understanding of the geometry of the colliding nuclei.

In the 2015 heavy-ion data-taking period at the LHC, the ATLAS experiment obtained 0.49/nb of the Pb+Pb data and 25/pb of the proton-proton data at the centre of mass energy of 5.02 TeV. The fully analysed data presented in this talk addresses the nuclear modification of the parton distribution functions PDF at a new level of precision. Comparison between the lead-lead and proton-proton systems gives an opportunity to subject the Glauber model used by all heavy ion experiments to a stringent test performed over a wide range of collision centralities.

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