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Observation of top-quark pair production in p+Pb collisions in the ATLAS experiment

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Top quarks, the heaviest elementary particles carrying colour charges, are considered to be attractive candidates for probing the quark-gluon plasma produced in relativistic heavy-ion collisions. In proton-lead collisions, top-quark production is expected to be sensitive to nuclear modifications of parton distribution functions at high Bjoerken-x values, which are difficult to access experimentally using other available probes. In 2016, the ATLAS exper- iment recorded proton-lead collisions at centre-of-mass energy of 8.16 TeV per nucleon pair, corresponding to an integrated luminosity of 165 nb-1. In this poster, we present the final measurement of the top-quark pair production in dilepton and lepton+jet decay modes in the proton-lead system with the AT- LAS detector. The inclusive cross section is extracted using a profile-likelihood fit to data distributions in six signal regions. The nuclear modification factor is also measured.

Alternate track

1. Top Quark and Electroweak Physics

I read the instructions above

Yes

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