

# Top quark and quarkonia production in heavy-ion collisions with the ATLAS experiment

*Friday, July 19, 2024 5:19 PM (17 minutes)*

Measurements of top quarks in heavy-ion collisions are expected to provide novel probes of nuclear modifications to parton distribution functions as well as to bring unique information about the evolution of strongly interacting matter. We report the observation of the top-quark pair production in proton-lead collisions at the centre-of-mass energy of 8.16 TeV in the ATLAS experiment at the LHC. Top-quark pair production is measured in the lepton+jets and the dilepton channels, with a significance well above 5 standard deviations in each channel separately. The results from the measurement of the nuclear modification factor  $R_{pA}$  are also presented. If available, results from the measurement of top-quark production in Pb+Pb collisions will be presented and discussed and will be complemented by an overview of the most recent quarkonia measurements with ATLAS.

## Alternate track

1. Top Quark and Electroweak Physics

## I read the instructions above

Yes

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**Session Classification:** Heavy Ions

**Track Classification:** 07. Heavy Ions