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Typ: Talk

## ATLAS measurements of $b$ -jet suppression and heavy-flavor azimuthal correlations in 5.02 TeV Pb+Pb collisions

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The suppression of jets in heavy-ion collisions can provide detailed information about the hot, dense plasma formed in these collisions at the LHC. The energy loss mechanism can be studied by measuring differences in the suppression of  $b$ -tagged and inclusive jets in  $pp$  and Pb+Pb collisions. Besides the  $b$ -tagged jet measurements, an alternative method for probing the interactions of heavy quarks with the plasma, is the study of the correlations between heavy-quark pairs, which is sensitive to the relative importance of collisional versus radiative scattering processes. We report new ATLAS measurements of  $b$ -tagged and inclusive jet production and the measurement of the yield of correlated muon pairs from heavy-flavor decays in Pb+Pb and  $pp$  collisions at  $\sqrt{s_{NN}} = 5.02$  TeV. For  $b$ -tagged and inclusive jet, the transverse momentum distributions in Pb+Pb and  $pp$  collisions, as well as the nuclear modification factors,  $R_{AA}$ , in Pb+Pb collisions are presented together with comparisons to theoretical calculations. The measurement of correlated muon pairs from heavy-flavor decays includes per-event yields, scaled by the nuclear thickness function,  $T_{AA}$ , measured differentially as a function of centrality. Detailed studies of how the shape of the correlation in azimuthal-angle separation between the two muons, changes from peripheral to central Pb+Pb collisions, and comparison to the corresponding measurements in  $pp$  collisions are also presented.

### Experiment/Theory

ATLAS

### Affiliation

ATLAS Collaboration

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**Sitzung Einordnung:** Parallel: Jets and their modification in QCD Matter

**Track Klassifizierung:** Jets and their modification in QCD matter