



XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 60

Type: **Contributed Talk**

Dijets in p+Pb collisions and their quantitative constraints for nuclear PDFs

Monday, 19 May 2014 18:10 (20 minutes)

We present a perturbative QCD analysis concerning the production of high- p_T dijets in p+Pb collisions at the LHC. The next-to-leading order corrections, scale variations and free-proton PDF uncertainties are found to have only a relatively small influence on the normalized dijet rapidity distributions. Interestingly, however, these novel observables prove to retain substantial sensitivity to the nuclear effects in the PDFs. Especially, they serve as a more robust probe of the nuclear gluon densities at $x > 0.01$, than e.g. the inclusive hadron production. We confront our calculations with the recent data by the CMS collaboration. These preliminary data lend striking support to the gluon antishadowing similar to that in the EPS09 nuclear PDFs.

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Session Classification: Initial state physics

Track Classification: Initial State Physics