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Charged jets in p-Pb collisions with the ALICE detector

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Highly energetic jets are sensitive probes for the kinematics and the topology of high energy collisions. They are produced in an early stage of the collision from hard scattered partons that hadronize and eventually form jets as a spray of charged and neutral particles.

The measurement in p-Pb provides an important reference to study the effects of cold nuclear matter on jet production and hadronization. This is possible because the formation of a hot and dense medium like in Pb-Pb is not expected. Besides the comparison to Pb-Pb collisions, p-Pb analyses can also be an important constraint for the nuclear parton density functions providing information about the nuclear environment.

In terms of analysis techniques, the exact evaluation of the background from the underlying event is an important ingredient. It is much smaller than in Pb-Pb so that the methods for background estimation need to be refined.

Our jet analysis of p-Pb collisions at $\sqrt{s_{\rm NN}} = 5.02$ TeV is performed on data taken by the ALICE detector at the LHC in the beginning of 2013. The focus of our analysis lies on the jet spectra and their comparison to the spectra from pp collisions, including results depending on the multiplicity or centrality classes given in p-Pb collisions. For this analysis various estimates for the background and its fluctuations have been tested in p-Pb and PYTHIA MC simulations. Also, different unfolding settings have been evaluated.

On behalf of collaboration:

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