

# JET FRAGMENTATION TRANSVERSE MOMENTUM DISTRIBUTIONS IN PROTON-LEAD COLLISIONS MEASURED BY THE ALICE EXPERIMENT AT LHC

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The main goal of ultra relativistic heavy ion collisions and the ALICE experiment [1] at the LHC is the study of nuclear matter under extreme conditions and its deconfined phase known as Quark Gluon Plasma (QGP), where quarks and gluons are no longer bound to hadrons.

Partons with high transverse momentum traversing through the QGP medium are a sensitive probe of QGP. The medium induces energy loss on the partons and thus alters how they fragment into jets [2]. We study the fragmentation in proton-proton (p-p) and proton-lead (p-Pb) collisions. It is expected that no QGP is created in p-Pb collisions, but interactions with cold nuclear matter can still cause some modification. Vacuum conditions in p-p collisions provide a reference for p-Pb and Pb-Pb collisions.

In my presentation I will discuss the jet fragmentation transverse momentum ( $j_T$ ) distributions in  $\sqrt{s_{NN}} = 5.02$  TeV p-Pb collisions at the LHC as measured by the ALICE experiment.

- [1] K. Aamodt *et al.* [ALICE Collaboration], JINST 3 (2008) S08002. doi:10.1088/1748-0221/3/08/S08002
- [2] M. Gyulassy, P. Levai and I. Vitev, Nucl. Phys. B **571** (2000) 197 doi:10.1016/S0550-3213(99)00713-0 [hep-ph/9907461].