Contribution ID: **48** Type: **not specified**

Cold nuclear matter effects on jet suppression in heavy-ion collisions

Monday, 12 September 2016 11:05 (20 minutes)

High p_{T} jet suppression in ultra-relativistic heavy-ion (AA) collisions is a key signature of the formation of a deconfined phase (QGP).
To attribute this suppression uniquely to a hot and dense QGP medium, reference measurements are necessary to quantify the cold nuclear matter effects.
\par
An ideal way to study the influence of cold nuclear matter on the observed jet yield is to measure jet production in a \ensuremath{\mathrm {p\kern-0.05em A}} reference system. For this purpose, the ALICE Collaboration has collected data at \ensuremath{\sqrt{s_\mathrm{NN}}}=5.02\,TeV in the p–Pb collision system. In this system we have measured charged and full jets (p_{T}=20-120 and 20-90\,\ensuremath{\mathrm{GeV}\kern-0.05em/\kern-0.02em c}, respectively). We will present their measured yields and their comparison to expectations in \pp from next to leading order (NLO) calculations and scaled \ensuremath{\mathrm {p\kern-0.05em p}} measurements. We observe that the resultant \RpPb ratio is consistent with unity for all centralities.
We have further studied possible cold nuclear matter effects on the jet structure by calculating the ratio of jet yields with different resolution parameters (R = 0.2 and 0.4). This ratio is found to be consistent with that for \ensuremath{\mathrm {p\kern-0.05em p}} collisions at \ensuremath{\sqrt{s_\mathrm{NN}}}=5.02\,TeV from a NLO calculation.
\par
These measurements suggest that in the accessible kinematic range no significant modification of jets is caused by cold nuclear matter effects.
This provides strong support for a hot and deconfined phase being the cause of jet suppression in Pb–Pb collisions at the LHC.

Summary

Eliane Epple on behalf of ALICE collaboration, Yale University

Primary author: EPPLE, Eliane (Yale University)

Presenter: EPPLE, Eliane (Yale University)

Session Classification: Monday Morning