

Jet fragmentation in two particle correlation in Pb-Pb $\sqrt{s_{NN}}=2.76$ TeV

Tuesday, June 13, 2017 3:20 PM (20 minutes)

The modification in jets measured in heavy-ion collisions as compared to jets measured in pp collisions is a rich source of information on the medium properties. The medium-induced modifications are typically seen more clearly at low- p_T , where full jet reconstruction is difficult due to the very large background in heavy ion collisions. Two-particle correlations provide a way to study jets in the low- and intermediate- p_T regime. Jet fragmentation is observed as a peak around $(\Delta\eta, \Delta\phi) = (0, 0)$ in two-particle correlations, where $\Delta\eta$ and $\Delta\phi$ are the differences in pseudorapidity and azimuthal angle, respectively, between a trigger particle and associated particles.

In this talk, we will present ALICE measurements of I_{AA} , the jet peak yield in Pb-Pb divided by the yield from pp collisions, at $\sqrt{s_{NN}} = 2.76$ TeV. From $\Delta\eta$ -dependent I_{AA} , we observe that jets with $6 < p_{T, \text{trig.}} < 8$ GeV/c and $8 < p_{T, \text{trig.}} < 15$ GeV/c show a narrowing in pseudorapidity. This effect is prominent in central collisions and for high trigger momentum while it vanishes in peripheral collisions or for low trigger momentum. From the integrated, p_T -dependent I_{AA} we see enhancement at low- p_T in central collisions. These observations can be used to constrain energy loss models, particularly models that predict broadening of the jet by interactions with the medium.

List of tracks

Charge fluctuations, correlations and balance functions

Primary authors: VARGYAS, Marton (University of Jyvaskyla (FI)); ALICE COLLABORATION

Presenter: VARGYAS, Marton (University of Jyvaskyla (FI))

Session Classification: Charge fluctuations, correlations and balance functions