

Hadron-Resonance Correlation in pp collisions at the LHC with ALICE

The Width and the mass of short lived resonances are sensitive to the medium properties during the phase transition from the deconfined partonic phase to the confined hadronic phase. Heavy hadrons have a larger probability to be produced within the quark gluon plasma phase due to their short formation times. Heavy mass, high momentum resonances from jet fragmentation are more likely to be affected by the chirally symmetric medium, and the identification of the early produced resonances from jet fragmentation might be a viable option to study chirality [1]. Two particle correlations in di-jet cones can be used to distinguish between in-medium and in-vacuum fragmentation by assuming that the nearside correlations are surface biased whereas the away-side of a di-jet is likely interacting with the partonic medium.

In the analysis a single high pt hadron is chosen as a jet leading particle. Then the correlations of $\phi(1020)$ and $K^*(892)$, identified by their hadronic decay, with this leading particle have been studied in pp collisions at 7 TeV. The characteristics of these resonances (mass and width) as a function of the resonance correlation angle have been extracted both on the near side and the away side.

References

[1] C. Markert, R.Bellwied, I.Vitev, Phys. Lett B699 92-97

Author: MADAGODAHETTIGE DON, Dilan (University of Houston)

Presenter: MADAGODAHETTIGE DON, Dilan (University of Houston)

Track Classification: Hadron thermodynamics and chemistry