STAR measurements sensitive to Hadronization and UE/MPI

Leszek Kosarzewski, for the STAR Collaboration

Abstract

Studies of underlying event and hadronization in hadron collisions are important piece for the understanding of the overall particle production mechanisms. Several measurements showed correlations between the charged particle multiplicity and a process of interest. These processes include studies of heavy flavor production vs. charged particle multiplicity, jets and many others. Charged particle multiplicity observed in an event is related to the complex nature of hadronic interactions and constitutes the underlying event. It is affected not only by multiple parton interactions, but also by the color reconnections, projectile/target matter profiles and PDFs among many others. Accurate modelling is thus important with tuned event generators, so that they describe the experimental data.

This talk will present heavy flavor and jet measurements from the STAR experiment at RHIC that are sensitive to the underlying event. These results will be compared to model calculations. In addition, the STAR's Pythia8 tune, the "Detroit tune", will be discussed.