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Correlations between mid-rapidity charged tracks and large-rapidity event activity in p+Au collisions at $\sqrt{s_{NN}}=200$ GeV

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Measurements of “small,” p+A or d+A, systems at the LHC and RHIC have suggested possible collective flow and, for high event activity collisions, jet modification that may scale with Bjorken x . They also provide input to related questions of the initial state of the proton prior to and throughout its collision with the opposing heavy ion nucleus. This talk presents preliminary measurements of correlations between mid-rapidity charged tracks and high-rapidity event activity measured by scintillator tiles in $\sqrt{s_{NN}} = 200$ GeV p+Au collisions at STAR. These correlations are important because they inform the current discussion regarding the use of the Glauber model in small systems and have implications for calculating nuclear modification and quenching observables in these systems. The results support concerns about centrality binning in p+Au collisions, and as such motivate using ratios of semi-inclusive, as opposed to fully inclusive, jet spectra to look for jet enhancement or suppression.

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