

Abstract Submitted
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Determining the feasibility of using jets with large resolution parameters to analyze heavy ion collisions with sPHENIX CHRISTOPHER AVILES BRAMER¹, Lehigh Univ, SPHENIX COLLABORATION² — The study of jets produced in heavy ion collisions can provide insight into the properties of the medium of deconfined quarks and gluons created by the very same collisions. Jets are streams of elementary particles sometimes produced by the collisions of high energy partons that then fragment and hadronize. These jets (which can be described by pQCD assuming a high enough momentum) strongly interact with the quark-gluon plasma (QGP) formed during heavy ion collisions, thus providing information about the properties of QGP. Thus, it is important to know if analyzing collisions using jets with reclustered large resolution parameters would be beneficial to understanding QGP. Using sPHENIX simulation data with 200GeV as the center of mass energy could provide information about the viability of different sizes of jet resolution parameters as used to analyze the results of heavy ion collisions. This would be accomplished by clustering jets with smaller resolution parameters ($R = 0.2$ or smaller) together to create a clustered jet with a much larger parameter ($R = 0.6$ or larger), and then reporting on the jet energy scale and jet resolution that results from such measurements.

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