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Study of mutual influence of jet and flow In heavy ion collisions using AMPT model SOUMYA MOHAPATRA, Department of Physics, SUNY Stony Brook, JIANGYONG JIA, Department of Chemistry, SUNY Stony Brook, ZI-WEI LIN, Department of Physics, East Carolina University, SHINICHI ESUMI, Inst. of Physics, University of Tsukuba — The two particle correlations in heavy ion collisions are often analyzed using a two source model: high energy jets that are produced during the early stages of the collision and the collective flow of the bulk medium which is a result of its (ideal) fluid like behavior and its initial geometrical anisotropy. Such analysis reveals striking features, such as suppression of away side jet and Mach-Cones. However, the two source model has the disagreeable assumption that the jet and flow are independent of each other, which casts doubts over the results obtained using this model. In order to get an understanding of jet-flow correlations and test the validity/failure of the two source model, we study simulations of Au-Au collisions at RHIC energies using the AMPT model. To isolate the effects of the jet, we simulate events with and without high p_T jets and compare azimuthal distributions and p_T spectrum of particles as well as the two particle correlations. We will discuss the effects of the Jet on the above mentioned observables and how the jet can both enhance and reduce the V_2 depending on the p_T of the observed particles and the embedded jet.

Soumya Mohapatra
SUNY Stony Brook

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