Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Advantage of U+U over Au+Au collisions at the Relativistic Heavy Ion Collider[1] CHANDRA NEPALI, GEORGE FAI, DECLAN KEANE, Kent State University — In a graph of v_2/ϵ vs. $(1/S)(dN_{ch}/dy)$, STAR data [1] reach the reported perfect fluid value of v_2/ϵ for the most central Au+Au collisions at 200 GeV/nucleon. It is interesting to see whether a limit is reached asymptotically by the data when $(1/S)(dN_{ch}/dy)$ is increased further. Collisions of deformed uranium nuclei have been suggested to increase this quantity at fixed beam energy [2-4]. We have studied U+U collisions in a Monte-Carlo Glauber model and attempted to simulate realistic experimental conditions. We have examined $(1/S)(dN_{ch}/dy)$ under different centrality cuts and compared with Au+Au. The most desired U+U configuration (tip-to-tip) increases the $(1/S)(dN_{ch}/dy)$ by about 35% compared to Au+Au at $b = 0$ fm in the ideal case. In the context of real experiments and with available centrality cuts at the Relativistic Heavy Ion Collider, the predicted increase in $(1/S)(dN_{ch}/dy)$ is about 16% which we deem still a worthwhile gain.

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[1]This work was supported in part by US DOE grants DE-FG02-86ER40251 and DE-FG02-89ER40531.

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Date submitted: 13 Jan 2006 Electronic form version 1.4