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Bulk Nuclear Properties from Pion Yields JUN HONG, PAWEL DANIELEWICZ, Michigan State University — Intermediate energy (100 MeV/A $\sim$ 2 GeV/A) heavy ion collisions have been a powerful tool to extract information on bulk properties of nuclear matter. We find that net pion yields in central collisions are strongly sensitive to the momentum dependence of isoscalar nuclear mean field. We have reexamined the momentum dependence assumed in the Boltzmann equation model for the collisions and have optimized that dependence to describe FOPI pion yield measurements in the Au + Au collisions at different beam energies. The optimized dependence yields values of baryonic elliptic flow that compare favorably with measurements as well. On the other hand, ratios of charged pions from central collisions are believed to provide information about symmetry energy at supranormal densities. While our results differ in detail from some in the literature, we have optimized the observables exploiting differences between the charged pions, to provide the best guidance on the symmetry energy at supranormal densities, in central collision experiments.

Jun Hong
Michigan State University

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