Cumulant analysis of deformed systems using AMPT model SO-MADUTTA BHATTA, Stony Brook University — The collective phenomena in heavy ion collisions are sensitive to initial nuclear geometry. Data from heavy Ion collisions of ^{197}Au+^{197}Au and ^{238}U+^{238}U at $\sqrt{s_{NN}} = 200$ GeV from STAR experiment have been studied extensively in the recent past. Between these systems, Au is a spherical system whereas U has a prolate deformation. This deformation effect is expected to affect the magnitude of flow fluctuations. A measurement of flow cumulants in these systems using models like AMPT will help us constrain the initial geometry and medium properties. An AMPT study of flow cumulants can also help resolve the disagreement between the different estimates of the deformation parameter β_2 of isobaric systems $^{96}_{44}$Ru and $^{96}_{40}$Zr. This talk will present a study on the effect of deformation on flow cumulants using AMPT simulation. Symmetric and asymmetric cumulants for both systems with varying deformation parameters will also be compared and discussed.

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