Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

An iPython-based Monte-Carlo Glauber Model of Nuclear Collisions[1] JENNIFER KLAY, CHAD REXRODE, KATHRYN TZEKOV, Cal Poly San Luis Obispo — An iPython-based package to simulate the Monte-Carlo Glauber model of nuclear interactions was developed and published online for broad distribution. The simulation utilizes compiled data on nuclear charge density distributions to create nuclei and cross-section data from the Particle Data Group to generate large statistics simulations across a broad range of energies and collision systems. The simulation correlates the number of nucleons participating in a collision as well as the number of binary collisions with the impact parameter for each event. Individual collisions can be visually represented, demonstrating the event-by-event variation of particular geometric overlaps, which are obscured in the ensemble data. Good agreement between the program and expected results for Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV is demonstrated. Examples of possible future RHIC experiments such as He^3+Au collisions at $\sqrt{s_{NN}} = 200$ GeV will be shown.

[1]Work supported by the National Science Foundation under Grant No. 130746.

Jennifer Klay
Cal Poly San Luis Obispo

Date submitted: 01 Jul 2014 Electronic form version 1.4