Contribution ID: **572**   Type: **Poster**

Nuclear structure from isobar data: a systematic initial-state study

We perform a systematic study of nuclear structure parameters and their effects on (actual and potential) heavy-ion collision observables, using the Trento model of initial conditions. From a sensitivity analysis we determine which measurements and what precision are necessary for extracting particular properties such as quadrupole, octupole, and hexadecupole deformation parameters, as well as triaxiality parameters and details of short-range correlations. We determine the precision with which these parameters can be determined from existing RHIC data, and perform a Bayesian analysis to estimate the structure of ^{96}Zr relative to ^{96}Ru. We also estimate the statistics necessary to obtain a given precision, and show that – due to recent advancements in methods – it is feasible to perform a full Bayesian calibration (using full hybrid simulations) with a limited amount of computing power.

Category

Theory

Collaboration (if applicable)

Authors: PAULO PICCHETTI, João; Prof. WILLIAM LUZUM, Matthew (University of São Paulo)

Presenter: PAULO PICCHETTI, João

Session Classification: Poster session 1

Track Classification: Initial state of hadronic and electron-ion collisions & nuclear structure