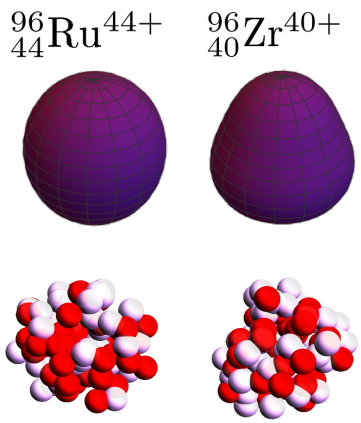
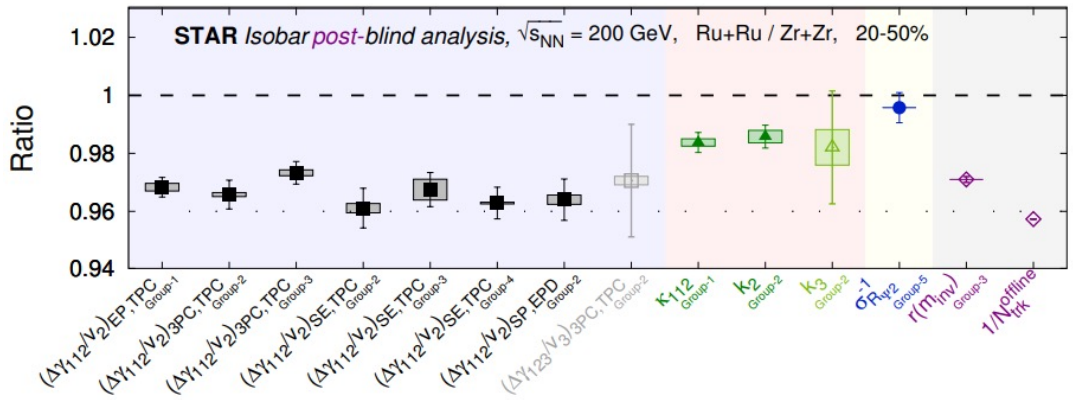


Future opportunities for collaboration and experimental studies

opportunities between nuclear structure and heavy ion collisions.



Dean Lee and Wilke van der Schee
Discussion session 27 January 2022

Nuclear structure

1. Which nuclei are possible for future RHIC experiments and what are the main factors involved in the decisions?
2. In which cases would the structural information obtained from RHIC experiments be competitive with low-energy experiments?
3. What are the approximations we are making in the current description of the collisions? How can we quantify and reduce the errors?
4. Can the connection from quantum initial wave functions to classical hydrodynamics be made rigorous?
5. Can the boosting of the quantum initial wave functions be done rigorously?
6. How can the nuclear structure community support the effort?

Linking the two

1. Do we just have to take the nuclear structure into account, if we do precision measurements in heavy-ion collisions, or can one really learn something new on nuclear structure from heavy-ions? (Hannah Elfner)
2. What important features of nuclei that are difficult to access in low-energy nuclear experiments can be easily accessed via high-energy heavy-ion collisions? What are ideal species to probe such features? (Giuliano Giacalone)

Heavy ion collisions

1. Do we need to go beyond Wood-Saxon?
2. Extreme precision needed to be sensitive to structure; do we have to revisit other assumptions?
   Boost invariance or subnucleon structure or transport? Is that statistically feasible?
3. When does it really help to go to sophisticated observables, such as v2-pT correlation? Seems successful for U and Xe, how about isobars?
4. What is the prospect to getting closer to magnetic effects and charge dependent observables?