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## Testing inputs to hydro codes with factorization breaking

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Data obtained at RHIC can be reproduced with relativistic viscous hydrodynamic simulations by adjusting the viscosity and initial conditions but it is difficult to disentangle these quantities. It is therefore important to find orthogonal observables to constrain the initial conditions separately from the viscosity. New observables have been measured at the LHC and shown to be sensitive to initial conditions and less to medium properties, specifically factorization breaking ratios appears to be promising. Here we consider two initial condition models, NeXus and TRENTO. While both models yield similar results for the scaled flow harmonic distributions both at the LHC and RHIC, they lead to quantitatively much more different patterns for the factorization breaking ratios at RHIC than at LHC, due to the shorter lifetime. For the same reason, not only final state interactions but also initial free streaming matter in these predictions and differences between these are enhanced at RHIC compared to LHC. Therefore experimental factorization breaking ratios at RHIC top energy would be interesting to get.

This presentation is a follow up of arXiv:2105.12792

### Category

Theory

### Collaboration (if applicable)

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