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Multiphase transport model predictions of isobaric collisions with nuclear structure from density functional theory

Summary

Isobaric Ru+Ru and Zr+Zr collisions were performed at the Relativistic Heavy Ion Collider in 2018. Using the AMPT (a multi-phase transport) model with nuclear structure calculated by the density functional theory (DFT), we make predictions for the charged hadron multiplicity distributions and elliptic azimuthal anisotropies in these collisions. Emphases are put on the relative differences between the two collision systems that can decisively discriminate DFT nuclear distributions from the commonly used Woods-Saxon densities.

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