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# Light nuclei production in isobaric $^{96}_{44}$Ru + $^{96}_{44}$Ru and $^{96}_{40}$Zr + $^{96}_{40}$Zr collisions at $\sqrt{s_{\rm NN}}$ = 7.7 - 200 GeV from a multiphase transport model

The production of light nuclei in isobaric $^{96}_{44}$Ru + $^{96}_{44}$Ru and $^{96}_{40}$Zr + $^{96}_{40}$Zr collisions, ranging from $\sqrt{s_{NN}}$ =7.7 to 200 GeV, are studied using the string melting version of A Multi Phase Transport (AMPT) model combined with a coalescence approach to light nuclei production. From the calculated yields, transverse momentum ($p_T$) spectra, and rapidity dependences of light nuclei ($p$, $n$, $d$, $t$, $^3$He), we find that the Ru+Ru/Zr+Zr ratios for yields of these particles exceed unity with the inclusion of a quadrupole deformation $\beta_2$ and octupole deformation $\beta_3$ as well as the neutron skins. We also find that heavier particles exhibit a greater deviation from unity. Furthermore, we find that the impact of isospin effects on light nuclei production in isobar collisions gradually diminishes as increasing the collision energy, while the influence of nuclear structure becomes more significant at higher energies.

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