Light Nuclei Production in Au+Au Collisions at $\sqrt{s_{\rm NN}}$ = 3 GeV from the STAR experiment

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Light nuclei, such as deuteron and triton, are loosely bound objects. Their yields are expected to be sensitive to baryon density fluctuations and can be used to probe the QCD critical point and the signatures of a first-order phase transition in heavy-ion collisions. In 2018, RHIC started the second phase of the beam energy scan program (BES-II). The STAR Fixed Target (FXT) program was proposed to achieve lower center-of-mass energies and higher baryon density regions. Up to now, the STAR experiment has recorded high statistics data at $\sqrt{s_{\rm NN}}$ = 3 - 7.7 GeV in Au+Au collisions.

In this talk, we will present light nuclei production in Au+Au collisions at $\sqrt{s_{\rm NN}}$ = 3 GeV (FXT) recorded by the STAR experiment in 2018. We will show the transverse momentum spectra of proton (p), deuteron (d), triton (t), ^{3}He, and ^{4}He at various rapidity ranges. The rapidity and centrality dependence of coalescence parameters $B_2(d)$, $B_3(t)$, and $B_3(^3\mathrm{He})$, and particle ratios (d/p, t/p, t/d, $^3\mathrm{He}/p$ and $^4\mathrm{He}/p$) will be shown. In addition, the kinetic freeze-out temperature $T_{\rm kin}$ and average radial flow velocity $\langle\beta\rangle$ will also be discussed.