Light Nuclei Production in Au+Au Collisions at $\sqrt{s_{\rm NN}} = 3$ GeV from 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). Up to now, the STAR experiment has recorded high statistics data from Au+Au collisions at $\sqrt{s_{\rm NN}}$ = 9.2, 11.5, 14.6, 19.6, and 27 GeV (collider mode) and 3 - 7.7 GeV (fixed-target mode).

In this talk, we will present light nuclei production in Au+Au collisions at $\sqrt{s_{\rm NN}}$ = 3 GeV (fixed-target mode) 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 $B_3(^3\mathrm{He})$, particle ratios (d/p, t/p, t/d, $^3\mathrm{He}/p$ and $^4\mathrm{He}/p$) will also be presented. Their physics implications will be discussed.