Light Nuclei Production in Au+Au Collisions at $\sqrt{s_{\rm NN}}$ = 3 and 27 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 taken the data of high statistics 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) and 27 GeV (collider mode) measured in 2018 by STAR experiment. We will show the transverse momentum (p_T) 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, B_3), and yield ratio of $N_p N_t / N_d^2$ will be also presented. Their physics implications will be discussed.