## Light Nuclei $v_1$ and $v_2$ in Au+Au Collisions at $\sqrt{s_{NN}}=3$ GeV from STAR

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(Dated: February 10, 2021)

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Study of light nuclei production in heavy-ion collisions, to understand their production mechanism and the underlying collision dynamics, is of particular interest for both theoretical and experimental efforts [1]. Comprehensive measurements of light nuclei collectivity  $v_1$  and  $v_2$  provide valuable information on the nucleon coalescence sum rule and will help better understand of light nuclei production mechanism in such collisions. Particularly, in the collision energy regime of a few GeV, the relatively long passing time of the two colliding nuclei naturally leads to interactions between the spectator matter and the fireball. Therefore, the light nuclei flow pattern may be strongly affected by the spectator fragments.

In this talk, we will present new precise measurements of  $v_1$  and  $v_2$  for deuterons, tritons, <sup>3</sup>He, and <sup>4</sup>He in Au+Au collisions at  $\sqrt{s_{NN}}=3$  GeV by the STAR experiment at RHIC. The data was recorded in fixed-target mode in 2018. The particle rapidity and transverse momentum dependence of  $v_1$  and  $v_2$  for these particles will be presented. These results will also be discussed in the context of nucleon coalescence and compared with available model calculations.

[1] Peter Braun-Munzinger and Benjamin Dönigus, Nuclear Physics A, 987, 144 (2019).