

# 1 **Measurements of collective flow for light-nuclei and hyper-nuclei in Au+Au collisions from** 2 **STAR**

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6 The yield and collective flow of light-nuclei and hyper-nuclei are sensitive to the production mech-  
7 anism of those particles and the dynamics of the late-time hadronic medium produced in high-energy  
8 nuclear collisions [1–3]. In particular, the production and flow of hyper-nuclei would probe the  
9 hyperon-nucleon interactions especially in the high baryon density region.

10 In this talk, we report the first observation of hyper-nuclei  ${}^3_{\Lambda}\text{H}$  and  ${}^4_{\Lambda}\text{H}$  directed flow  $v_1$  in 5-40%  
11 central Au+Au collisions at  $\sqrt{s_{NN}} = 3$  GeV measured by STAR experiment. The results will be  
12 compared to those of the copiously produced light nuclei with similar mass such as  ${}^3\text{He}$  and  ${}^4\text{He}$   
13 measured in the same collision energy. In addition, energy dependence ( $\sqrt{s_{NN}} = 3 - 39$  GeV) of  
14 the mid-rapidity light nuclei  $v_1$  and elliptic flow  $v_2$  in Au+Au collisions will be presented. These  
15 new results will be discussed within the framework of transport model + coalescence calculations.  
16 At 3 GeV, it is found that hadronic interactions dominate the medium properties.

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