

Flow measurements of light- and hyper-nuclei in Au+Au collisions at $\sqrt{s_{NN}} = 3.0$ GeV at RHIC

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1 Studying hyper-nuclei yields and their collectivity can shed light on their production
2 mechanism as well as the hyperon-nucleon interactions. Heavy-ion collisions from the RHIC
3 beam energy scan phase II (BES-II) provide an unique opportunity to understand these at
4 high baryon densities.

5 In this presentation, we report on the directed flow (v_1) and the elliptic flow (v_2) of hyper-
6 nuclei, including Λ , ${}^3_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{H}$ and ${}^4_{\Lambda}\text{He}$, using approximately 2 billion minimum-bias events
7 from Au+Au collisions at $\sqrt{s_{NN}} = 3.0$ GeV, collected by the STAR experiment in the fixed-
8 target mode during BES-II. The large event statistics will enable detailed differential flow
9 measurements of hyper-nuclei in rapidity (y) and transverse momentum (p_T), and extend v_2
10 measurements to ${}^3_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{H}$ and ${}^4_{\Lambda}\text{He}$. These hyper-nuclei results are compared to that of light-
11 nuclei including p, d, t, ${}^3\text{He}$ and ${}^4\text{He}$. Finally, these results are compared with calculations
12 from a hadronic transport model.