

1 Directed Flow of Λ , ${}^3_{\Lambda}\text{H}$, and ${}^4_{\Lambda}\text{H}$ in Au+Au collisions at 2 $\sqrt{s_{NN}} = 3.2, 3.5, \text{ and } 3.9 \text{ GeV}$ at RHIC

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5 Studying hyper-nuclei production and their collectivity can shed light on their production
6 mechanism as well as the hyperon-nucleon interactions. Heavy-ion collisions from the RHIC
7 beam energy scan phase II (BES-II) provides an unique opportunity to understand these at
8 high baryon densities.

9 In this talk, we will present the directed flow (v_1) of the Λ and hyper-nuclei (${}^3_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{H}$)
10 from mid-central Au+Au collisions at $\sqrt{s_{NN}} = 3.2, 3.5, \text{ and } 3.9 \text{ GeV}$, collected by the STAR
11 experiment with the fixed-target mode during BES-II. The rapidity (y) dependence of the
12 hyper-nuclei v_1 is studied in mid-central collisions. The extracted v_1 slopes ($dv_1/dy|_{y=0}$) of
13 the hyper-nuclei are positive and decrease gradually as the collision energy increases. These
14 results will be compared with hadronic transport models with a coalescence after-burner.